FIG. 1

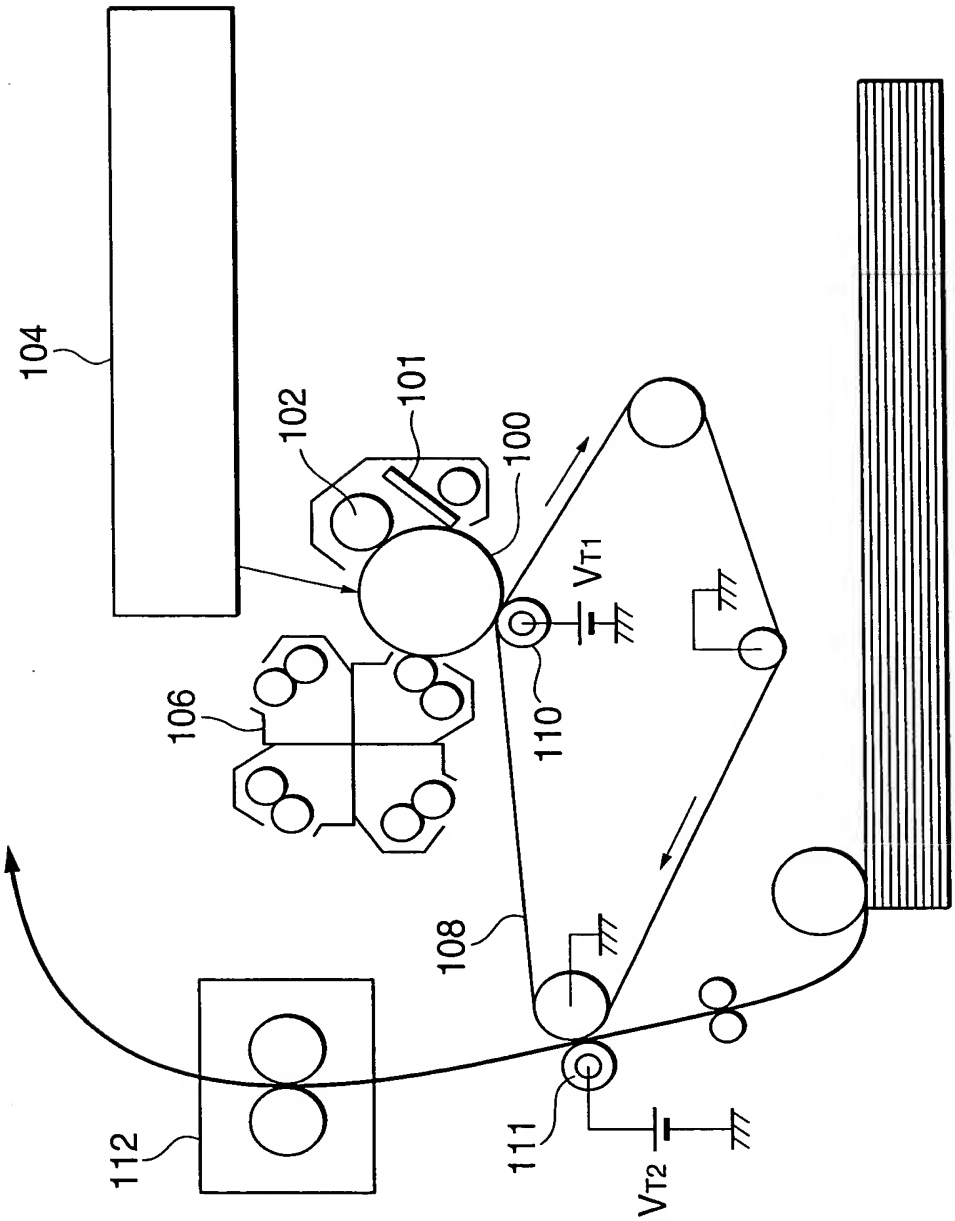


FIG. 2

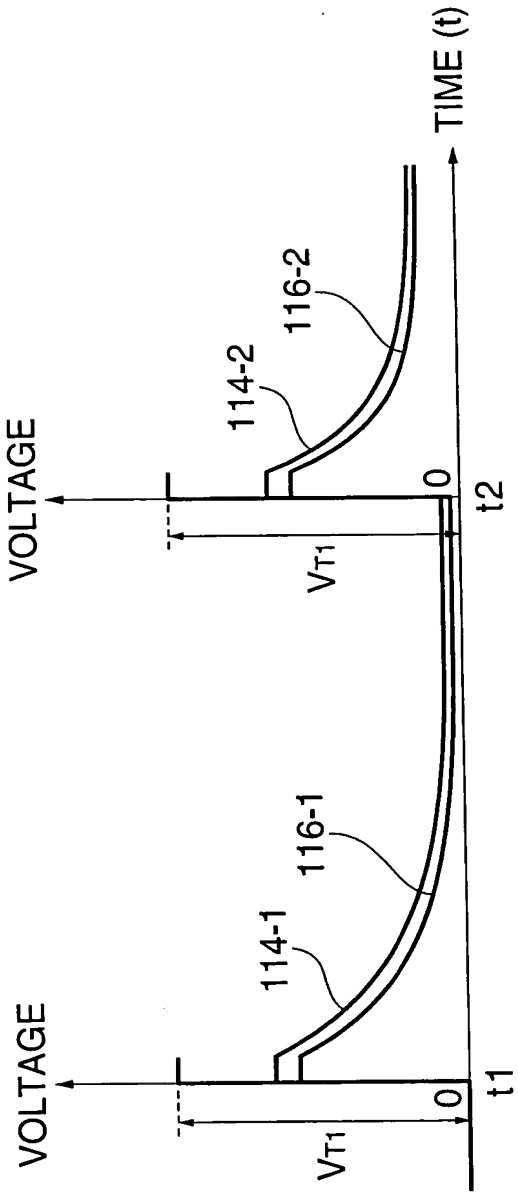


FIG. 3

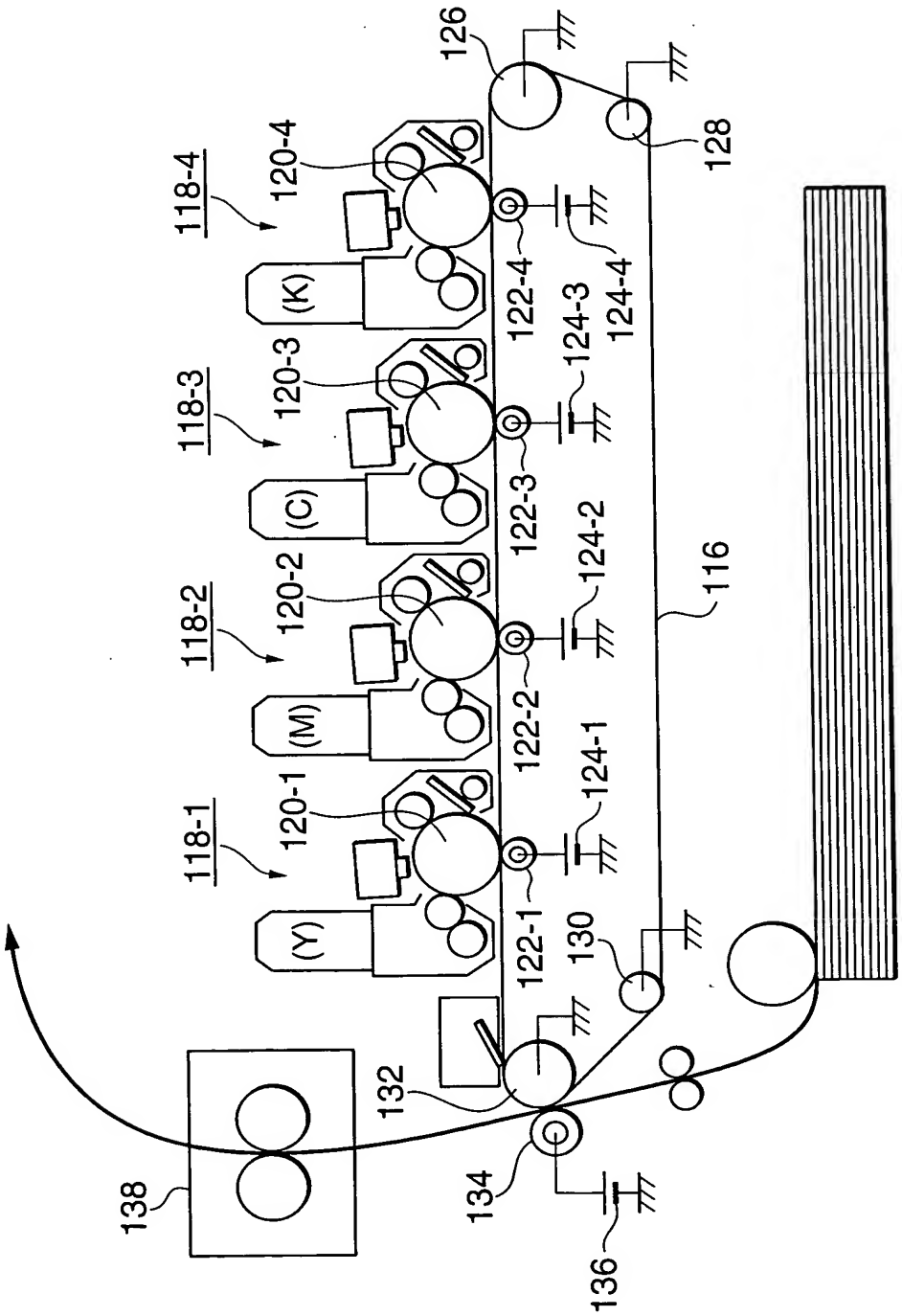

118-1
118-2
118-3
118-4
120-1
120-2
120-3
120-4
(Y)
(M)
(C)
(K)
122-1
122-2
122-3
122-4
124-1
124-2
124-3
124-4
126
128
130
132
134
136
138
116

FIG. 4

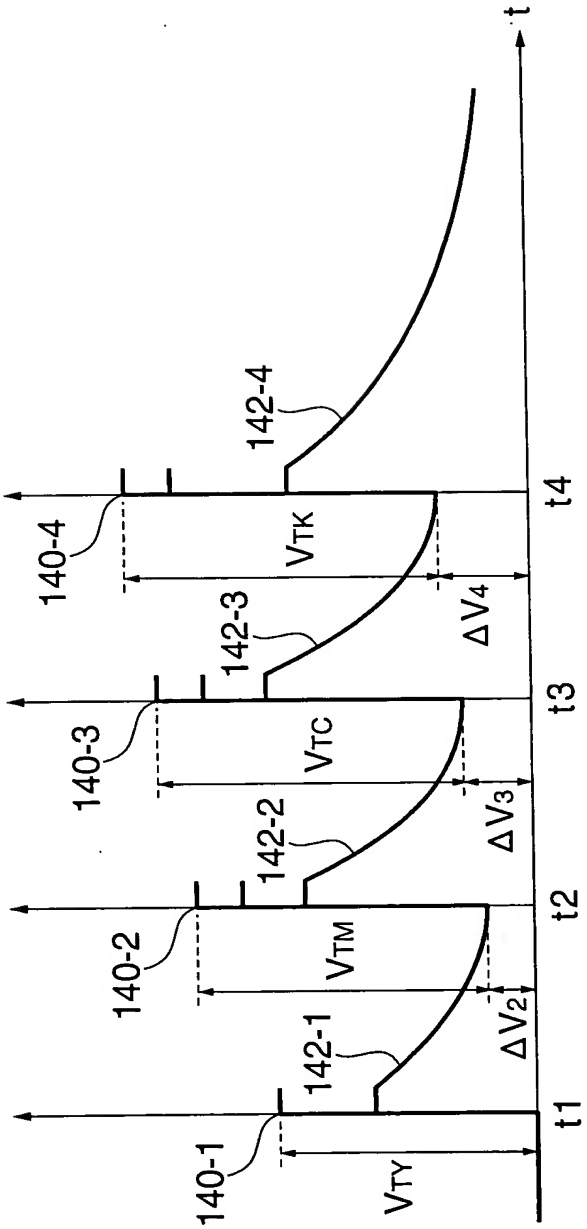

t
t1
t2
t3
t4
140-1
140-2
140-3
140-4
142-1
142-2
142-3
142-4
VTY
VTM
VTC
VTK
ΔV2
ΔV3
ΔV4

FIG. 5

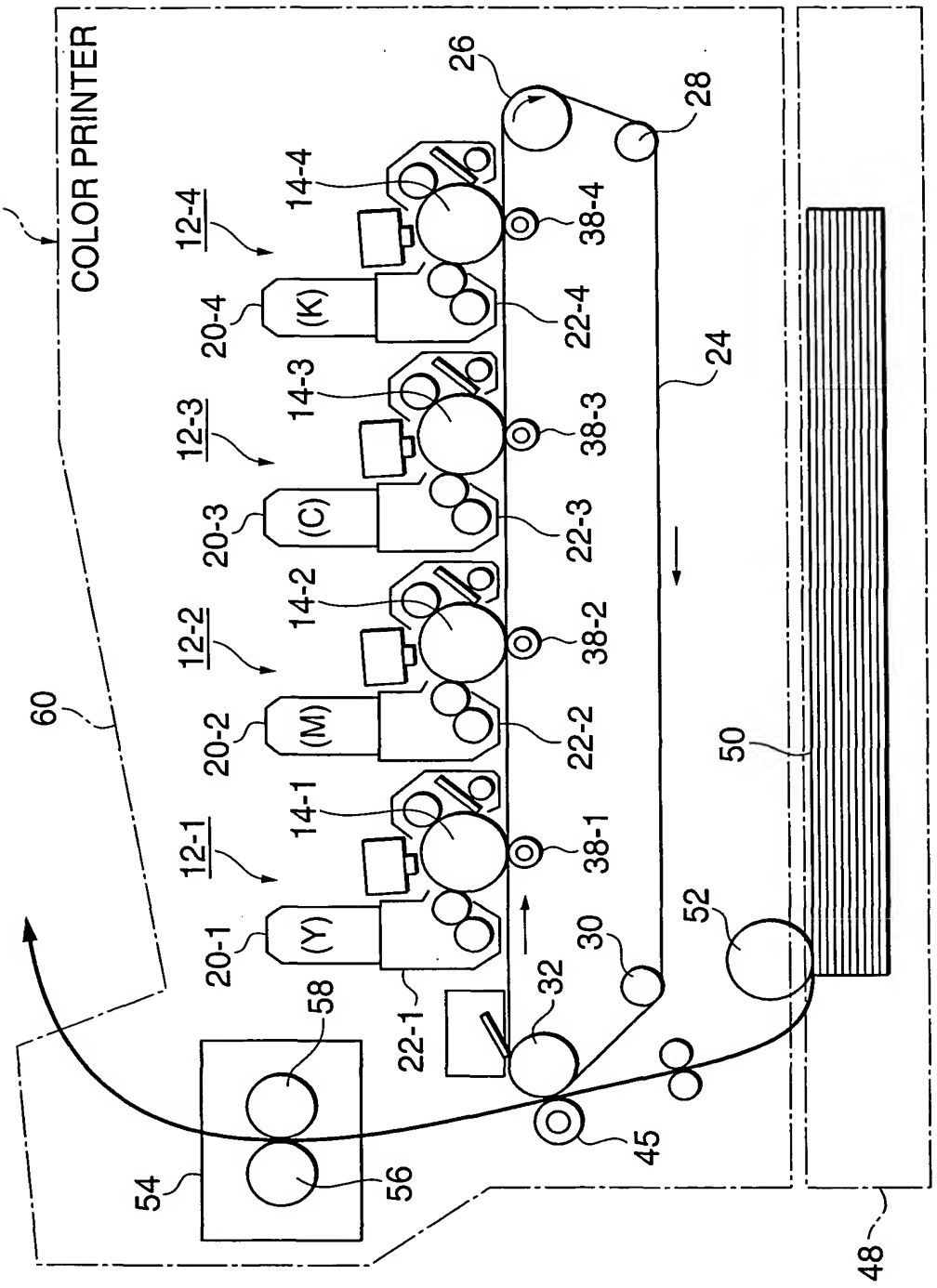

10
COLOR PRINTER
60
12-1
12-2
12-3
12-4
20-1
20-2
20-3
20-4
(Y)
(M)
(C)
(K)
14-1
14-2
14-3
14-4
22-1
22-2
22-3
22-4
24
26
28
30
32
38-1
38-2
38-3
38-4
45
48
50
52
54
56
58

FIG. 6

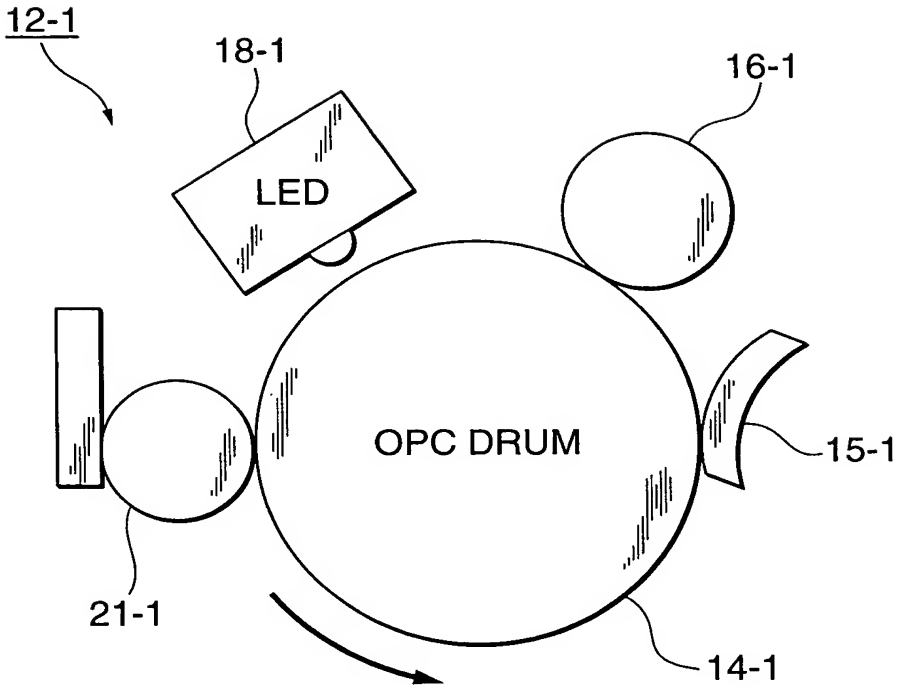


FIG. 7

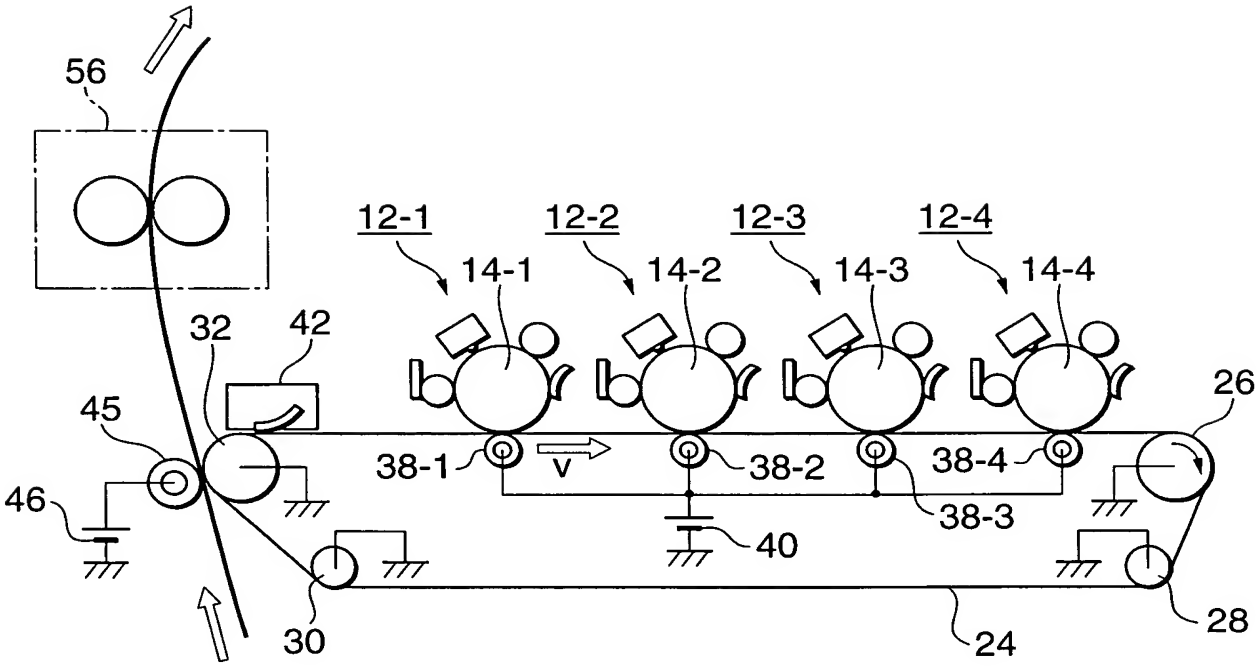

56
12-1
12-2
12-3
12-4
14-1
14-2
14-3
14-4
32
42
45
46
26
38-1
v
38-2
38-4
38-3
40
30
24
28

FIG. 8

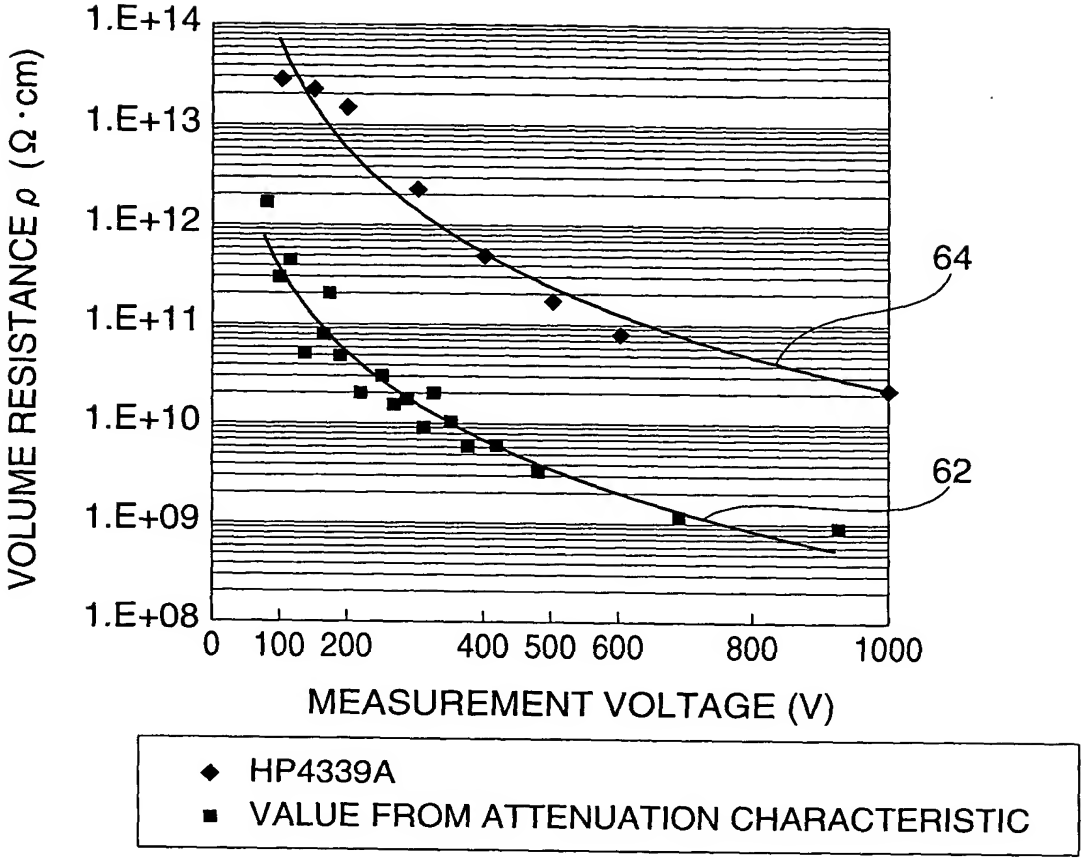

1.E+14
1.E+13
1.E+12
1.E+11
1.E+10
1.E+09
1.E+08
VOLUME RESISTANCE ρ (Ω·cm)
0
100
200
400
500
600
800
1000
MEASUREMENT VOLTAGE (V)
64
62
HP4339A
VALUE FROM ATTENUATION CHARACTERISTIC

FIG. 9

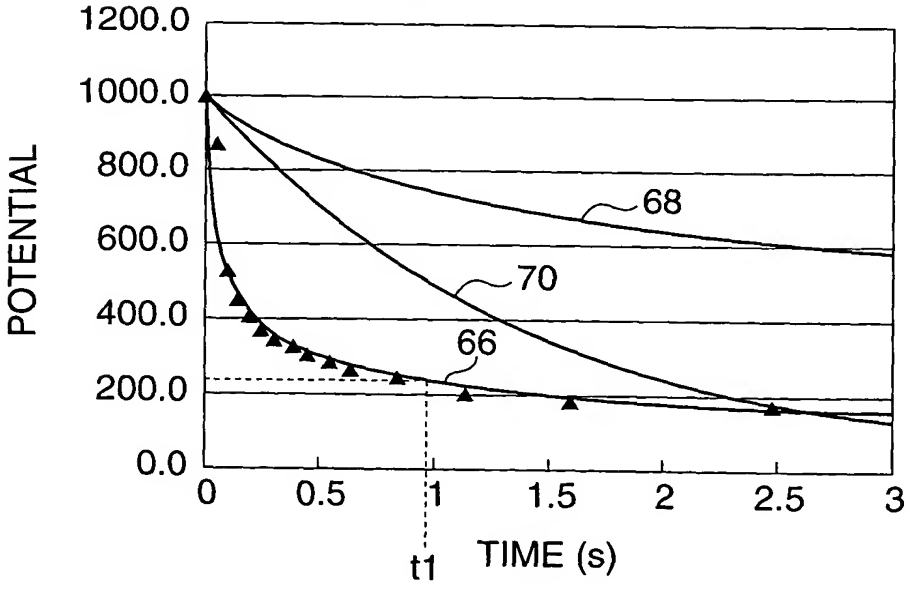

1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
POTENTIAL
0
0.5
1
1.5
2
2.5
3
TIME (s)
t1
68
70
66

FIG. 10

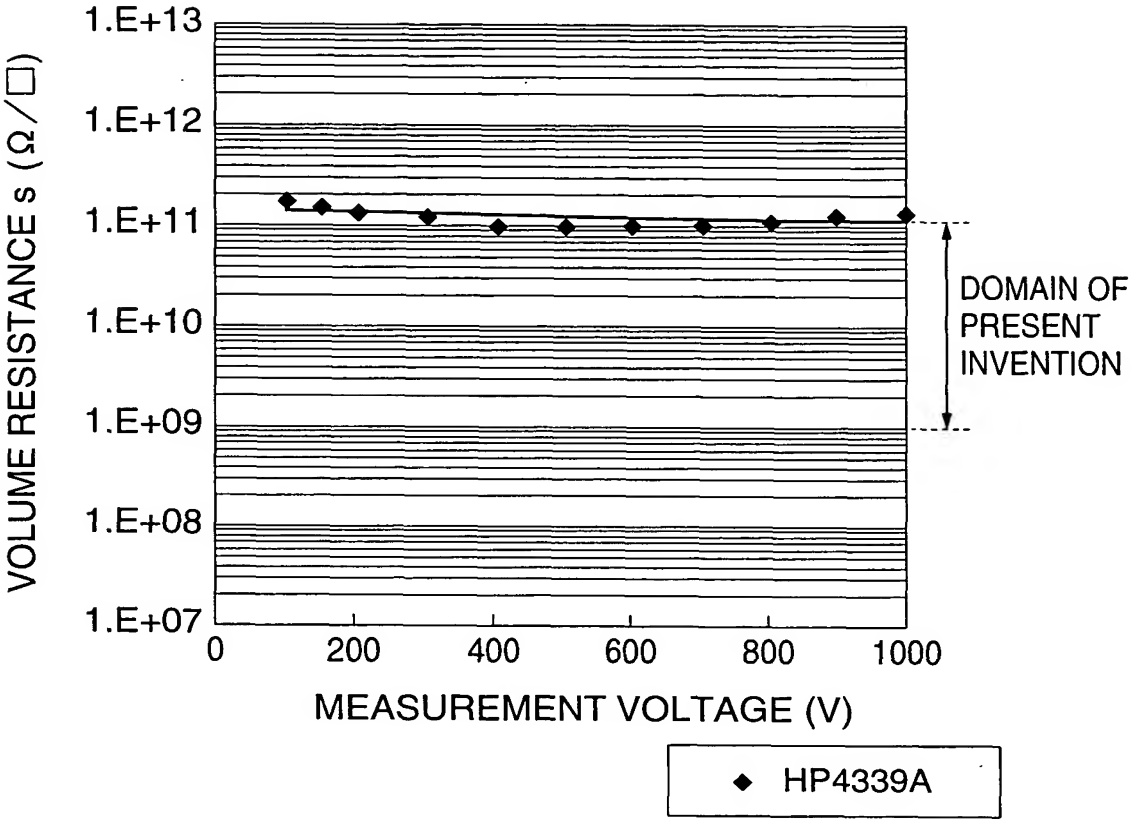

1.E+13
1.E+12
1.E+11
1.E+10
1.E+09
1.E+08
1.E+07
VOLUME RESISTANCE s (Ω/□)
0
200
400
600
800
1000
MEASUREMENT VOLTAGE (V)
DOMAIN OF PRESENT INVENTION
HP4339A

FIG. 11

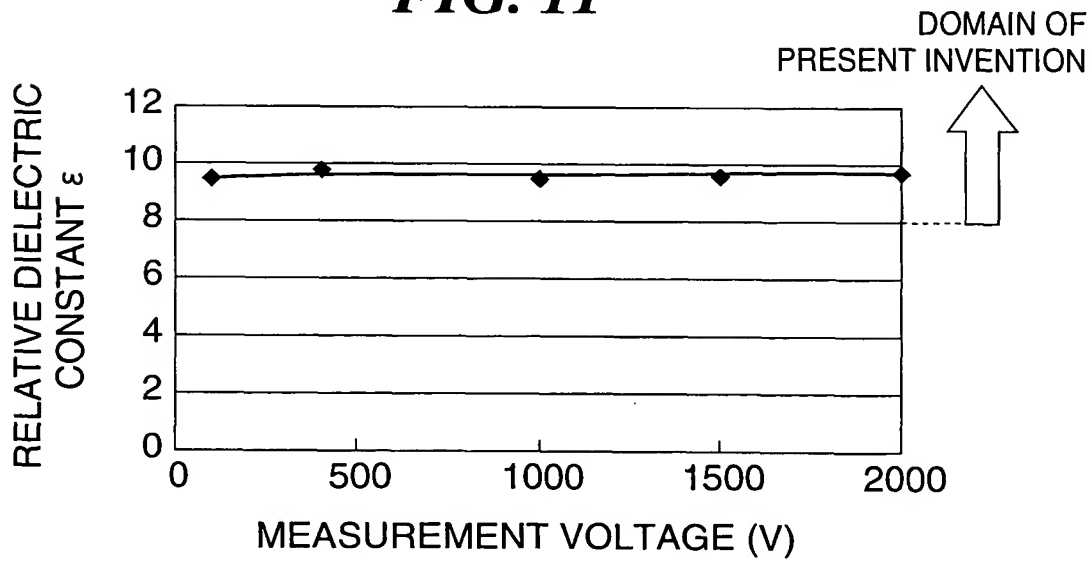

DOMAIN OF PRESENT INVENTION
RELATIVE DIELECTRIC CONSTANT ε
12
10
8
6
4
2
0
0
500
1000
1500
2000
MEASUREMENT VOLTAGE (V)

FIG. 12

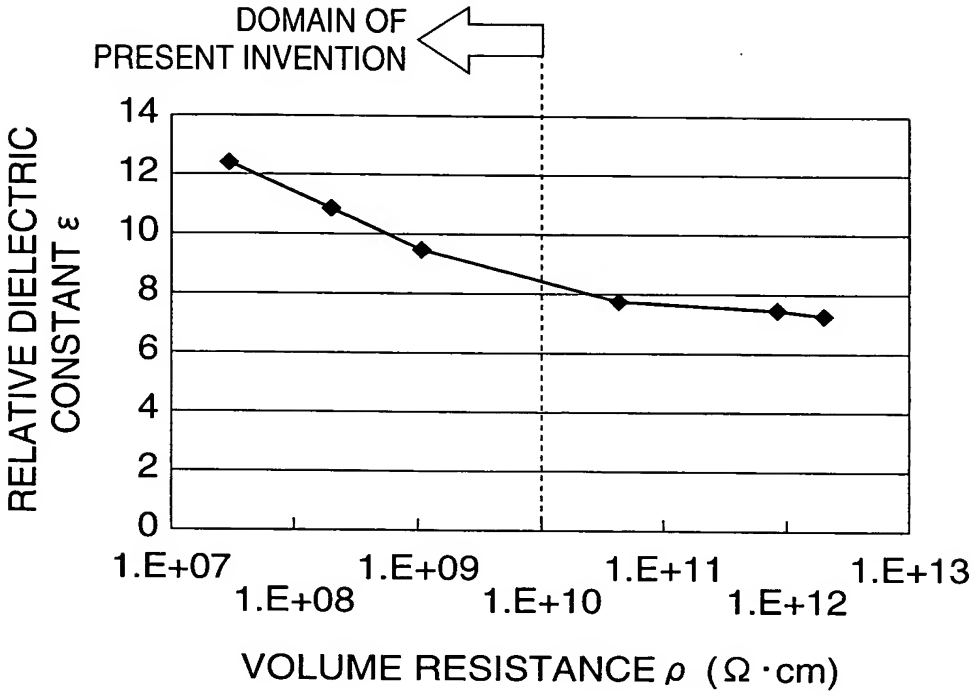

DOMAIN OF
PRESENT INVENTION
RELATIVE DIELECTRIC CONSTANT ε
14
12
10
8
6
4
2
0
1.E+07
1.E+08
1.E+09
1.E+10
1.E+11
1.E+12
1.E+13
VOLUME RESISTANCE ρ (Ω·cm)

FIG. 13

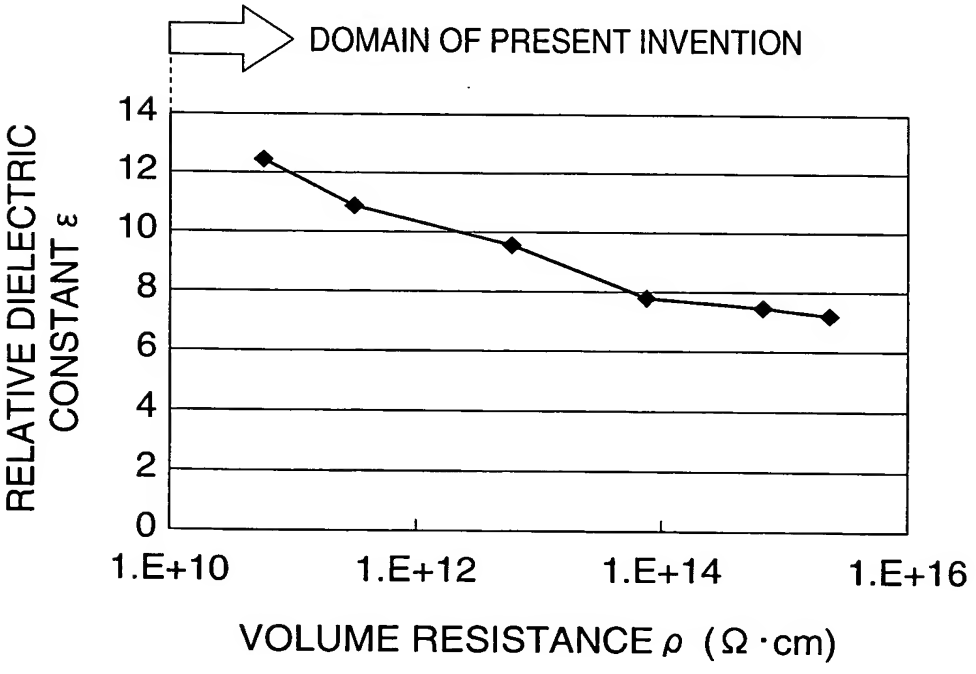

DOMAIN OF PRESENT INVENTION
RELATIVE DIELECTRIC CONSTANT ε
14
12
10
8
6
4
2
0
1.E+10
1.E+12
1.E+14
1.E+16
VOLUME RESISTANCE ρ (Ω·cm)

FIG. 14

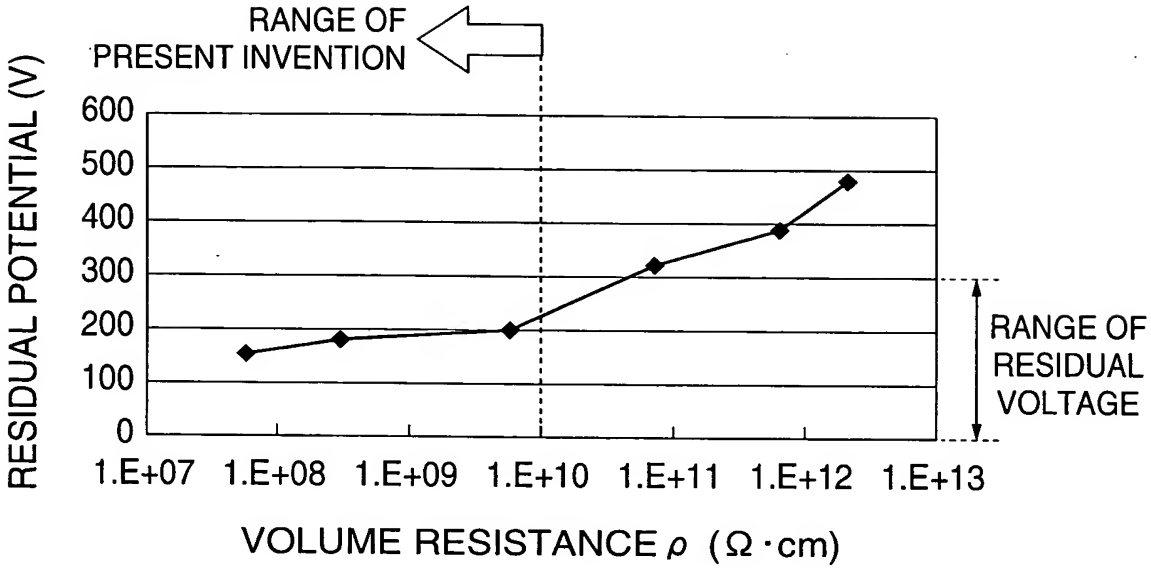

RANGE OF
PRESENT INVENTION
RESIDUAL POTENTIAL (V)
600
500
400
300
200
100
0
RANGE OF
RESIDUAL
VOLTAGE
1.E+07
1.E+08
1.E+09
1.E+10
1.E+11
1.E+12
1.E+13
VOLUME RESISTANCE ρ (Ω·cm)

FIG. 15

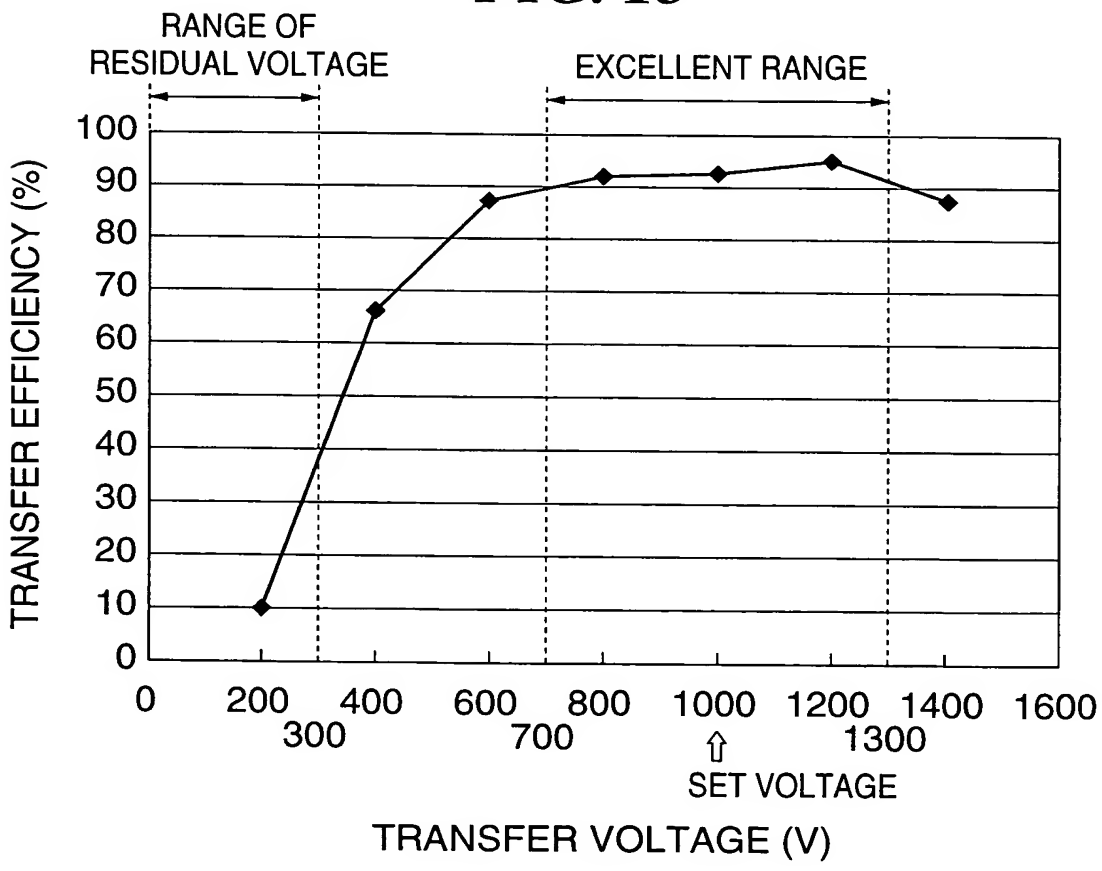

RANGE OF
RESIDUAL VOLTAGE
EXCELLENT RANGE
TRANSFER EFFICIENCY (%)
100
90
80
70
60
50
40
30
20
10
0
0
200
300
400
600
700
800
1000
SET VOLTAGE
1200
1300
1400
1600
TRANSFER VOLTAGE (V)

FIG. 16

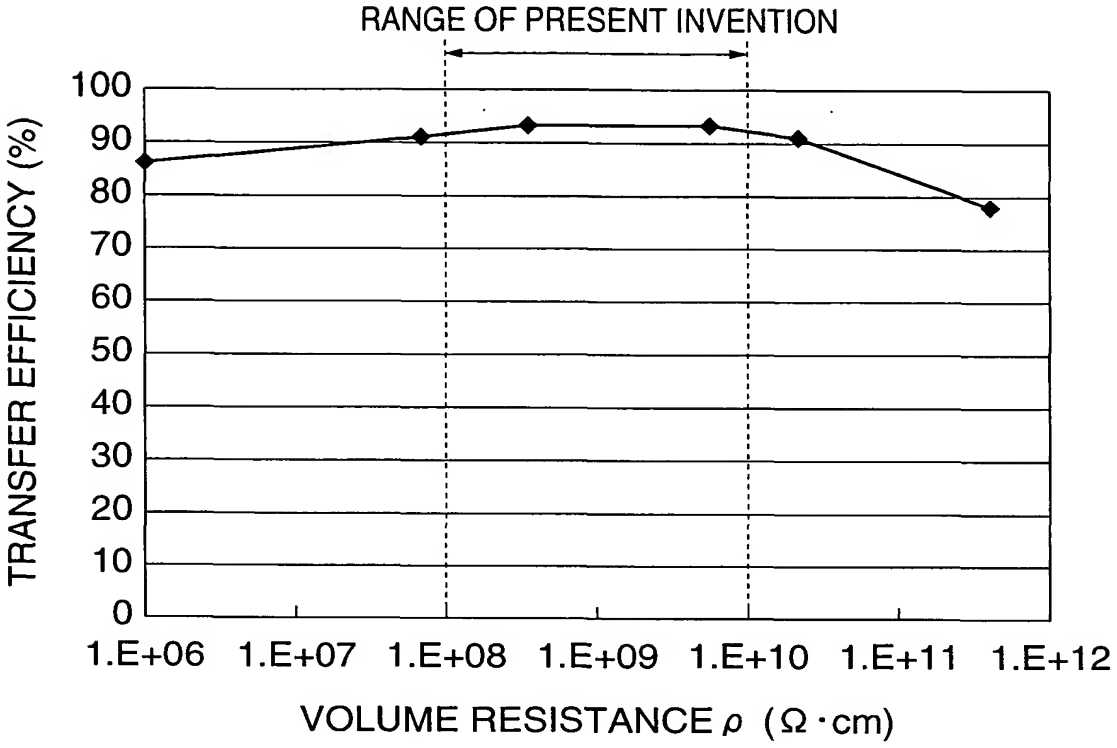

RANGE OF PRESENT INVENTION
TRANSFER EFFICIENCY (%)
100
90
80
70
60
50
40
30
20
10
0
1.E+06
1.E+07
1.E+08
1.E+09
1.E+10
1.E+11
1.E+12
VOLUME RESISTANCE ρ (Ω·cm)

FIG. 17

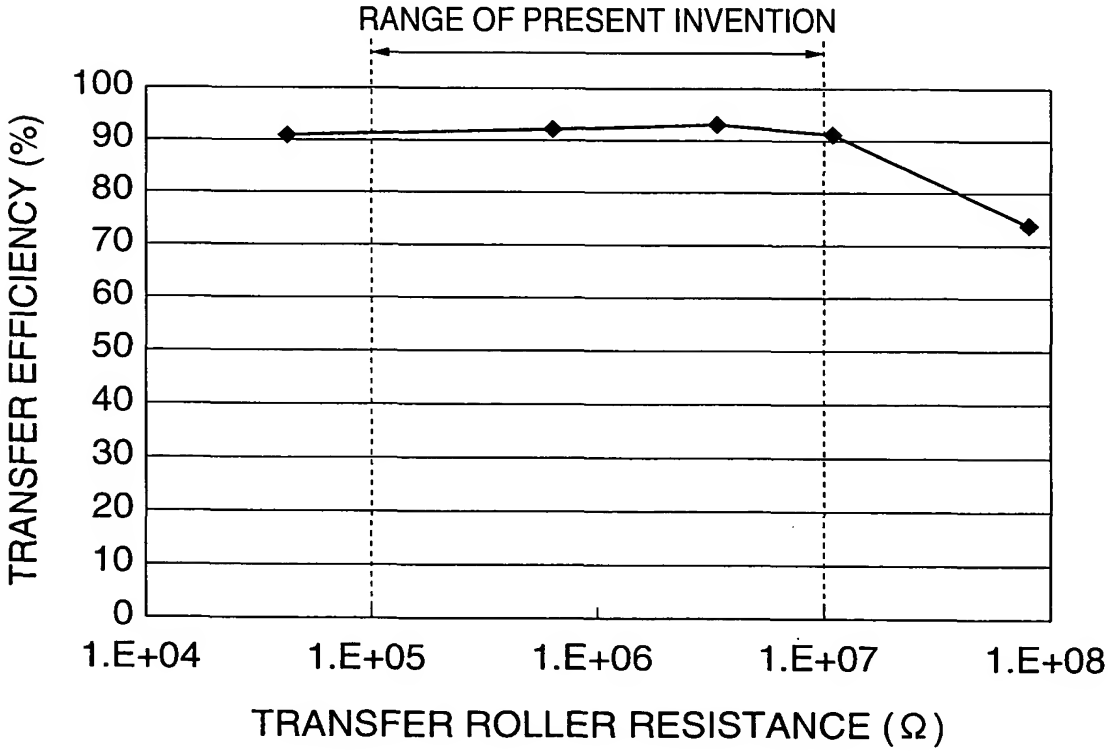

RANGE OF PRESENT INVENTION
TRANSFER EFFICIENCY (%)
100
90
80
70
60
50
40
30
20
10
0
1.E+04
1.E+05
1.E+06
1.E+07
1.E+08
TRANSFER ROLLER RESISTANCE (Ω)

FIG. 18

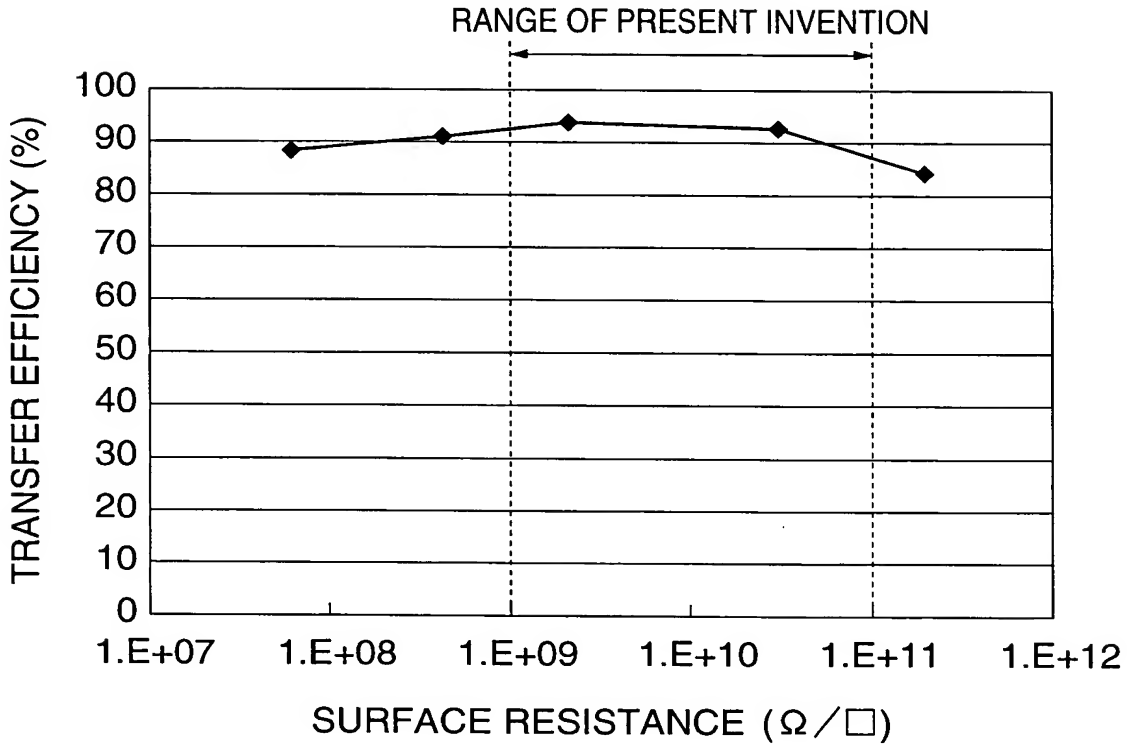

RANGE OF PRESENT INVENTION
TRANSFER EFFICIENCY (%)
100
90
80
70
60
50
40
30
20
10
0
1.E+07
1.E+08
1.E+09
1.E+10
1.E+11
1.E+12
SURFACE RESISTANCE (Ω/□)

FIG. 19

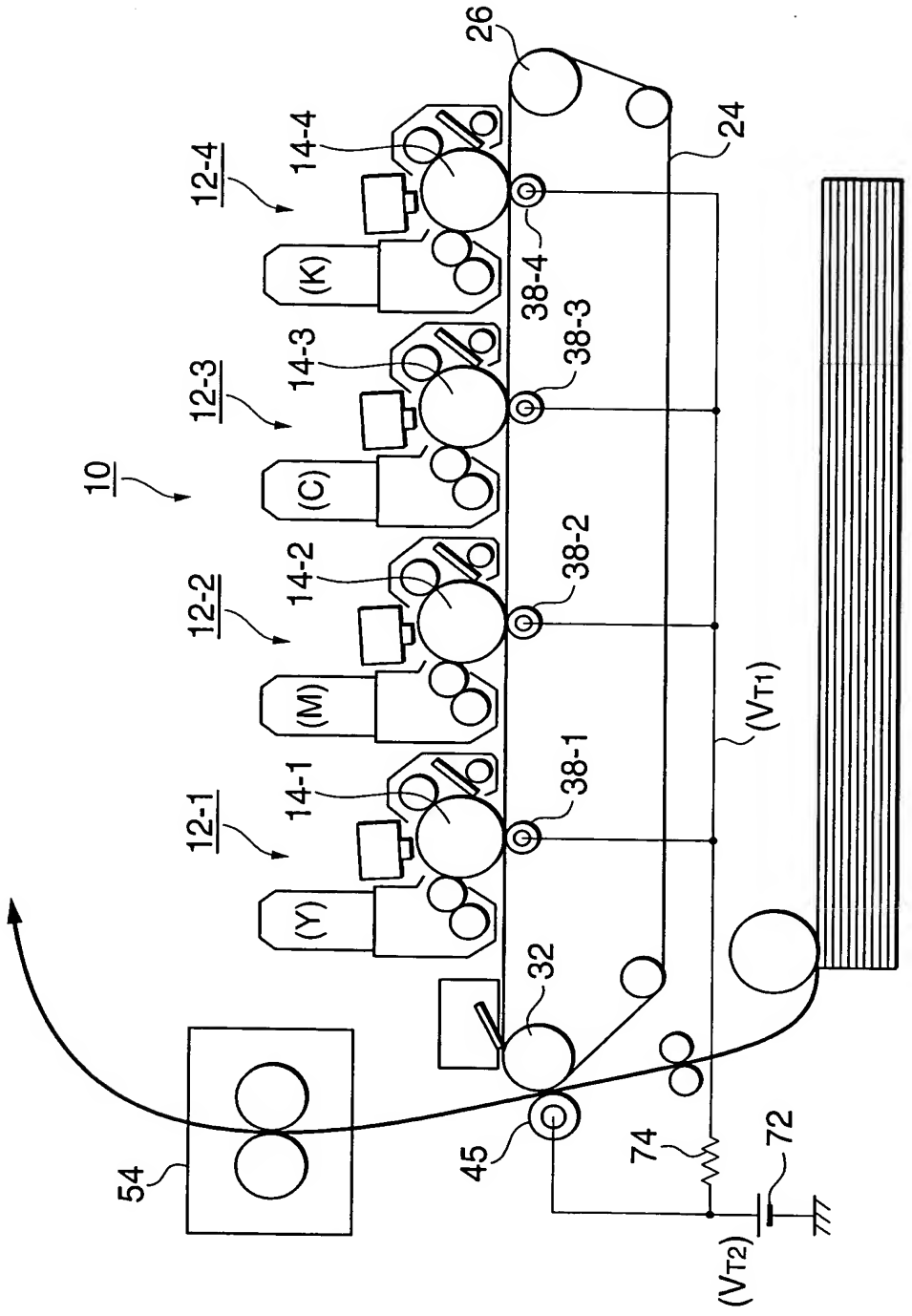

10
12-1
12-2
12-3
12-4
14-1
14-2
14-3
14-4
(Y)
(M)
(C)
(K)
26
24
38-1
38-2
38-3
38-4
32
45
54
74
72
(V_{T1})
(V_{T2})

FIG. 20

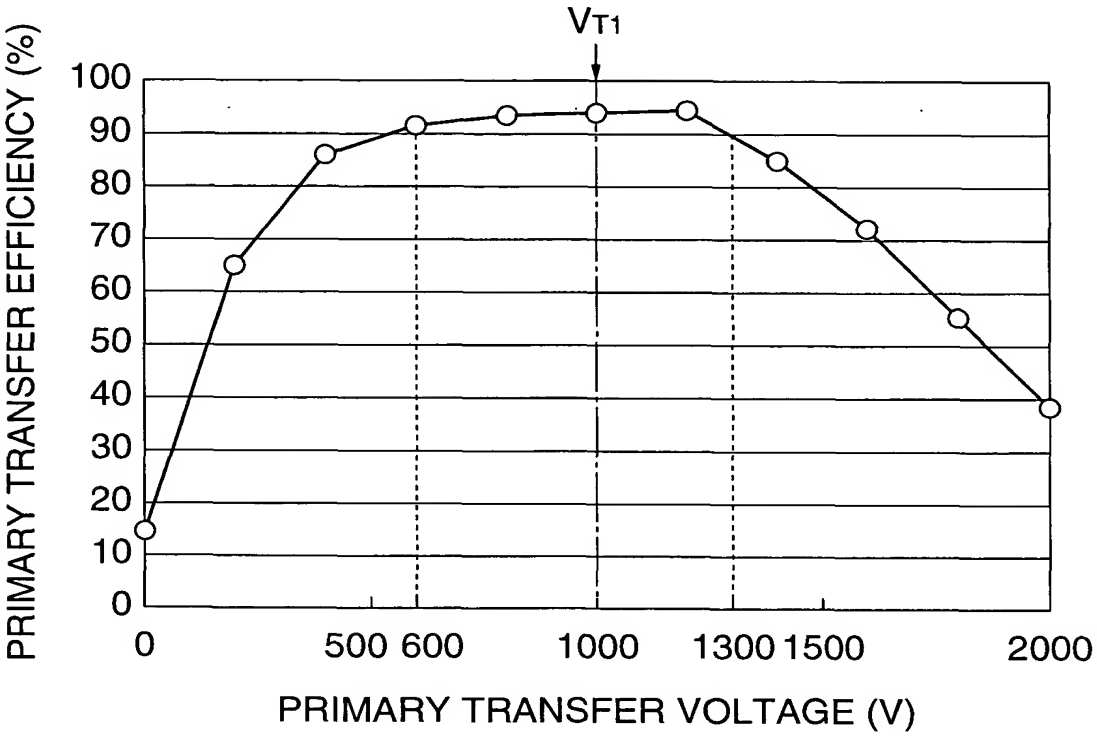

VT1
PRIMARY TRANSFER EFFICIENCY (%)
100
90
80
70
60
50
40
30
20
10
0
0
500 600
1000
1300 1500
2000
PRIMARY TRANSFER VOLTAGE (V)

FIG. 21

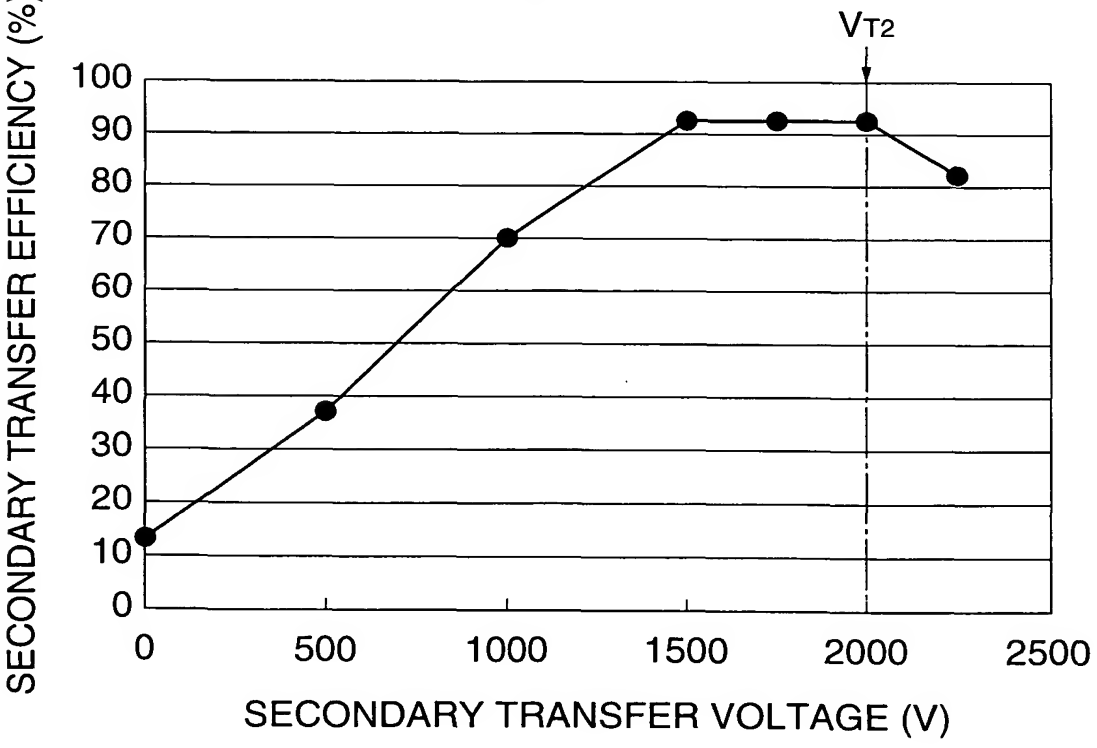

VT2
SECONDARY TRANSFER EFFICIENCY (%)
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
SECONDARY TRANSFER VOLTAGE (V)

FIG. 22

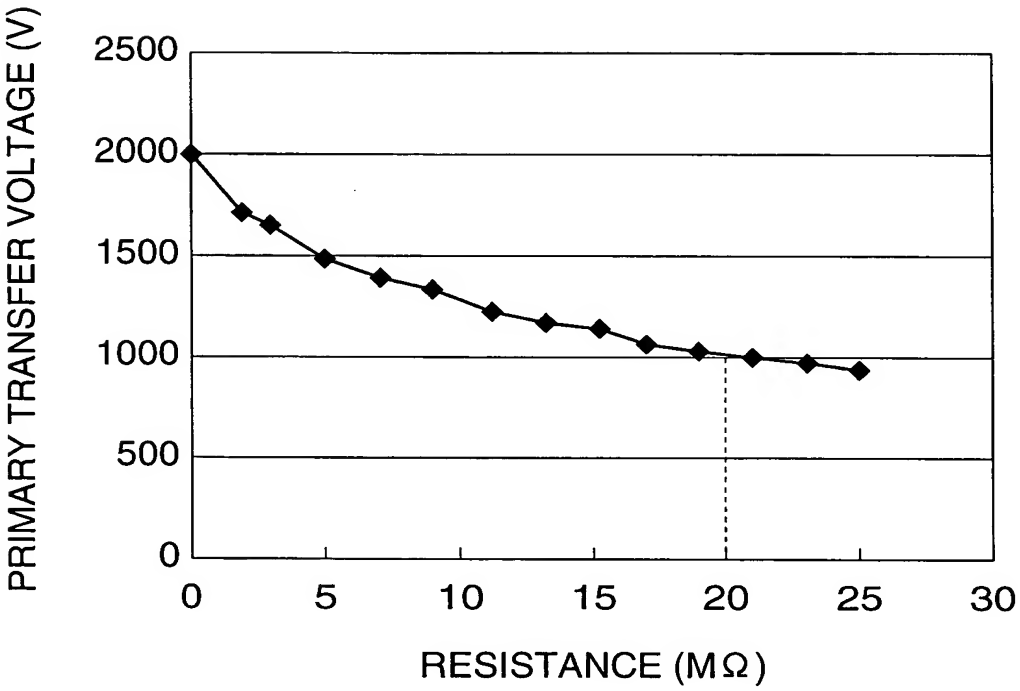

PRIMARY TRANSFER VOLTAGE (V)
2500
2000
1500
1000
500
0
0
5
10
15
20
25
30
RESISTANCE (MΩ)

FIG. 23

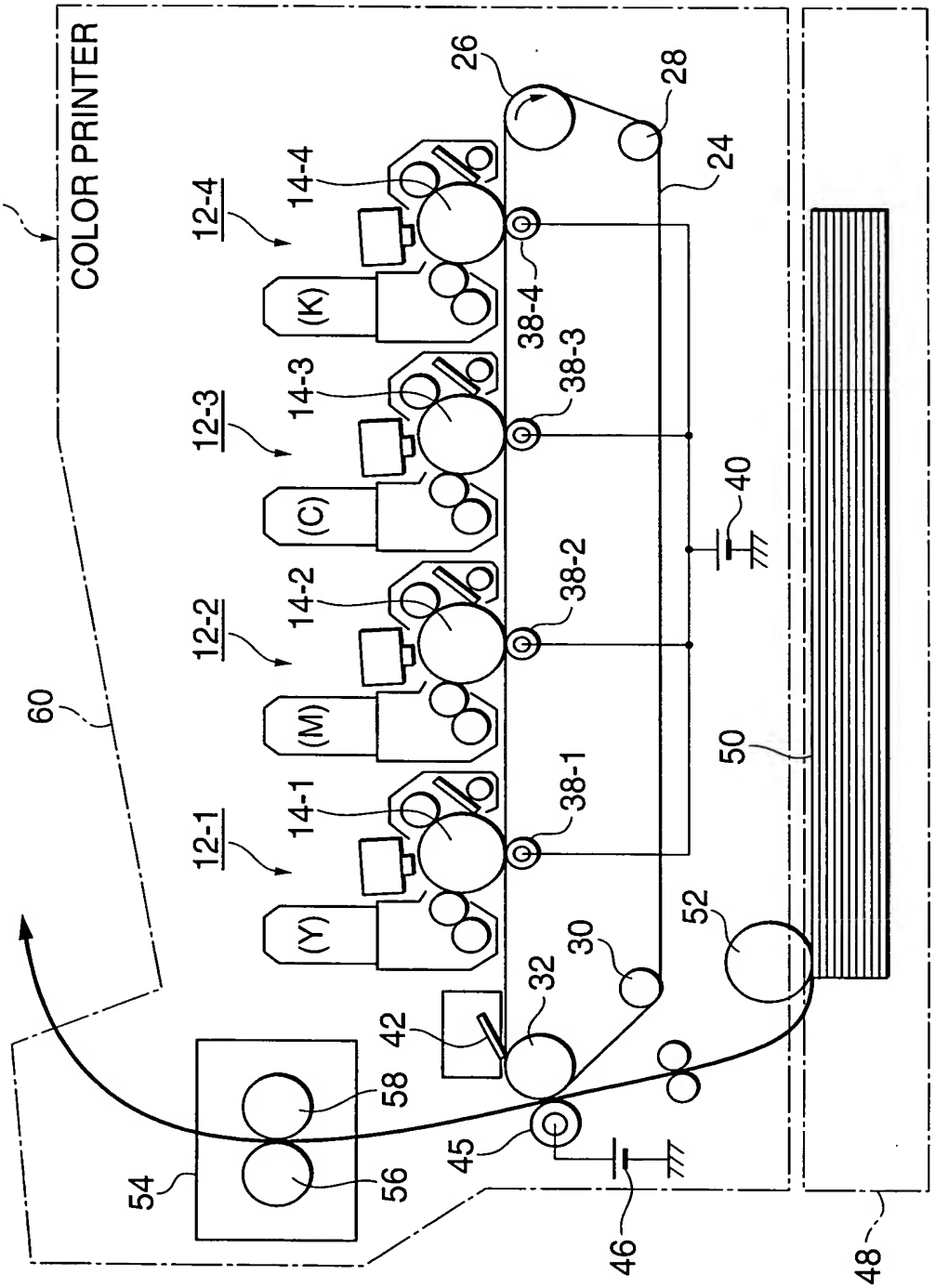

10
COLOR PRINTER
60
12-1
12-2
12-3
12-4
14-1
14-2
14-3
14-4
(Y)
(M)
(C)
(K)
26
28
24
38-1
38-2
38-3
38-4
40
50
52
30
32
42
45
46
48
54
56
58

FIG. 24A

COMPARATIVE EXAMPLE

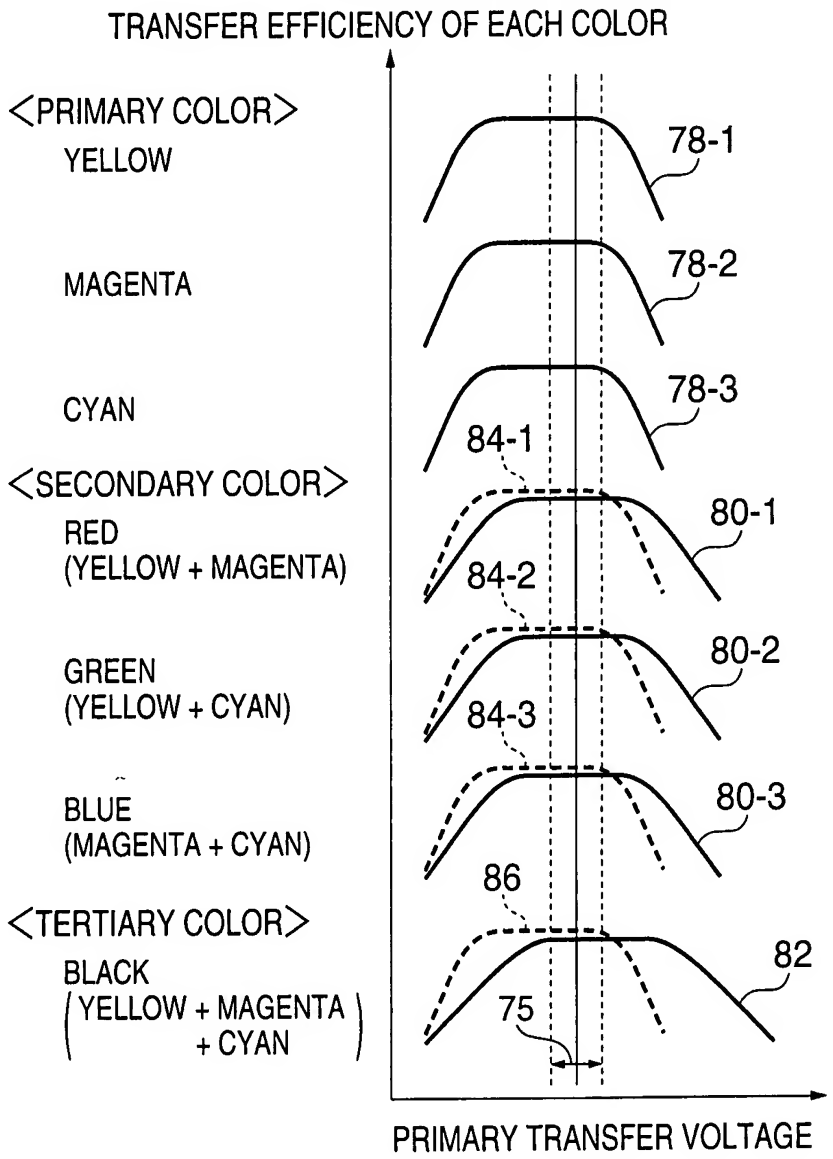


FIG. 24B

PRESENT INVENTION

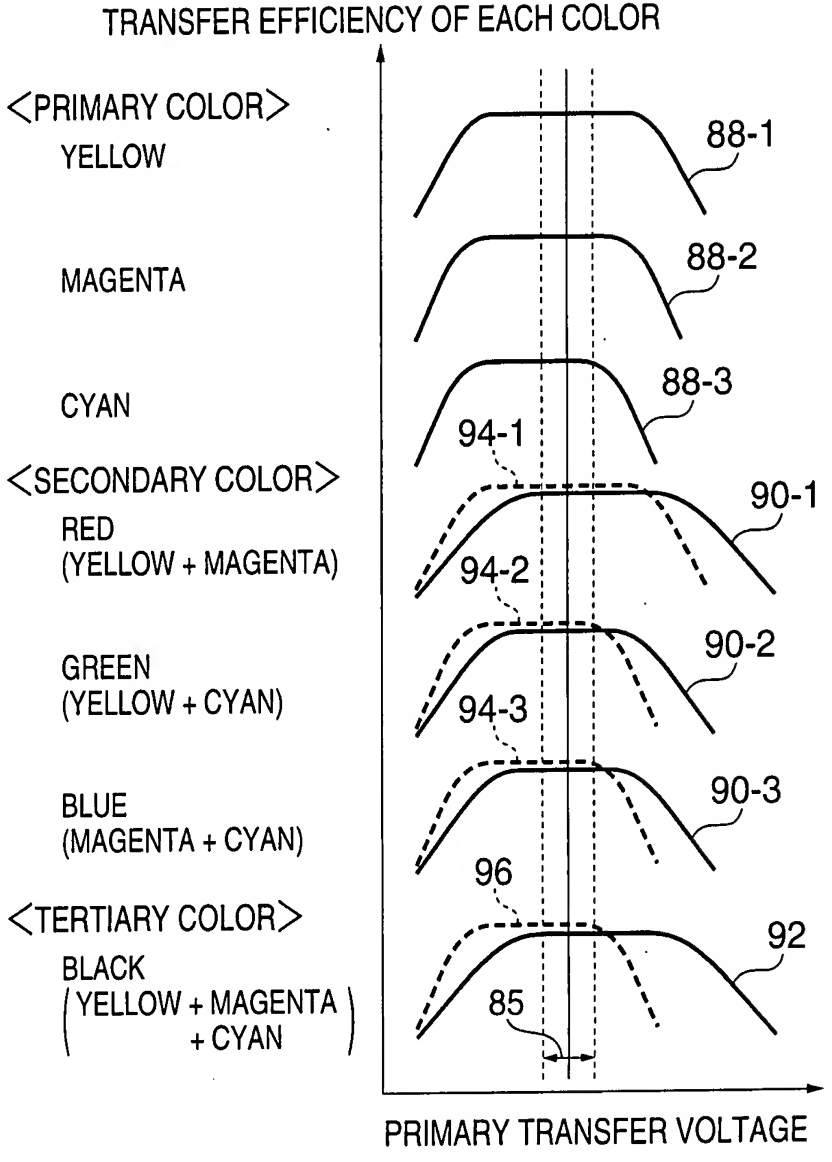


FIG. 25A

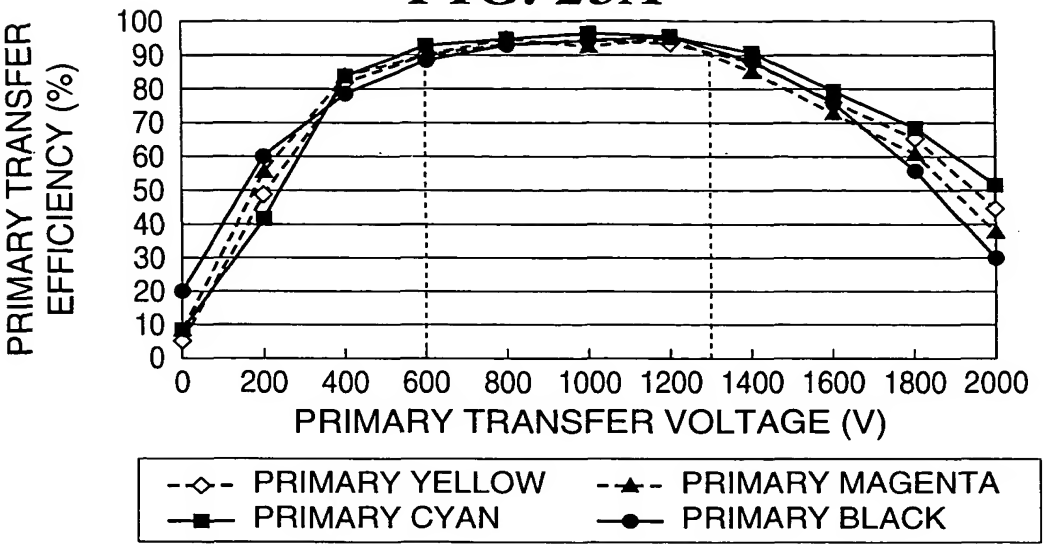


FIG. 25B

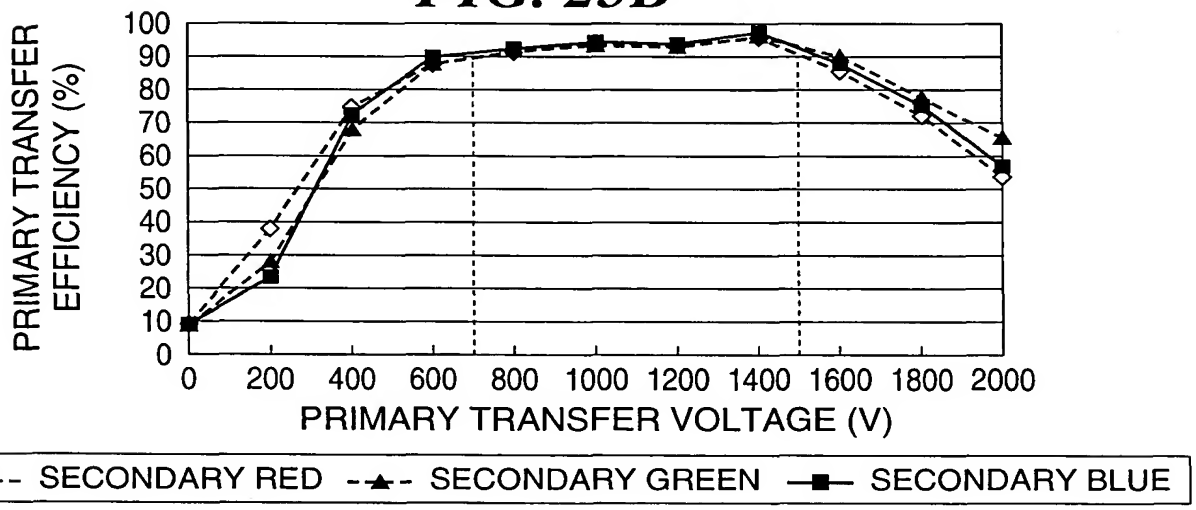


FIG. 25C

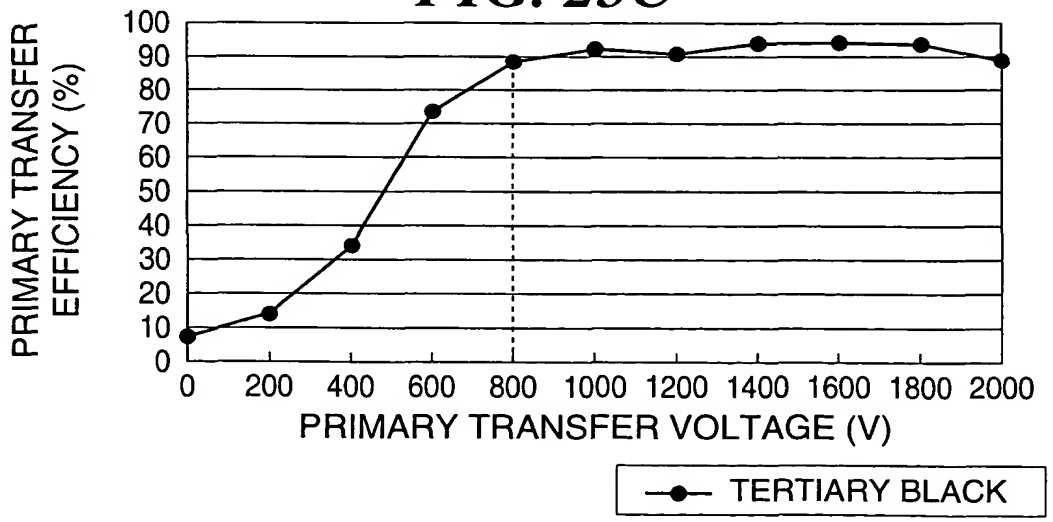
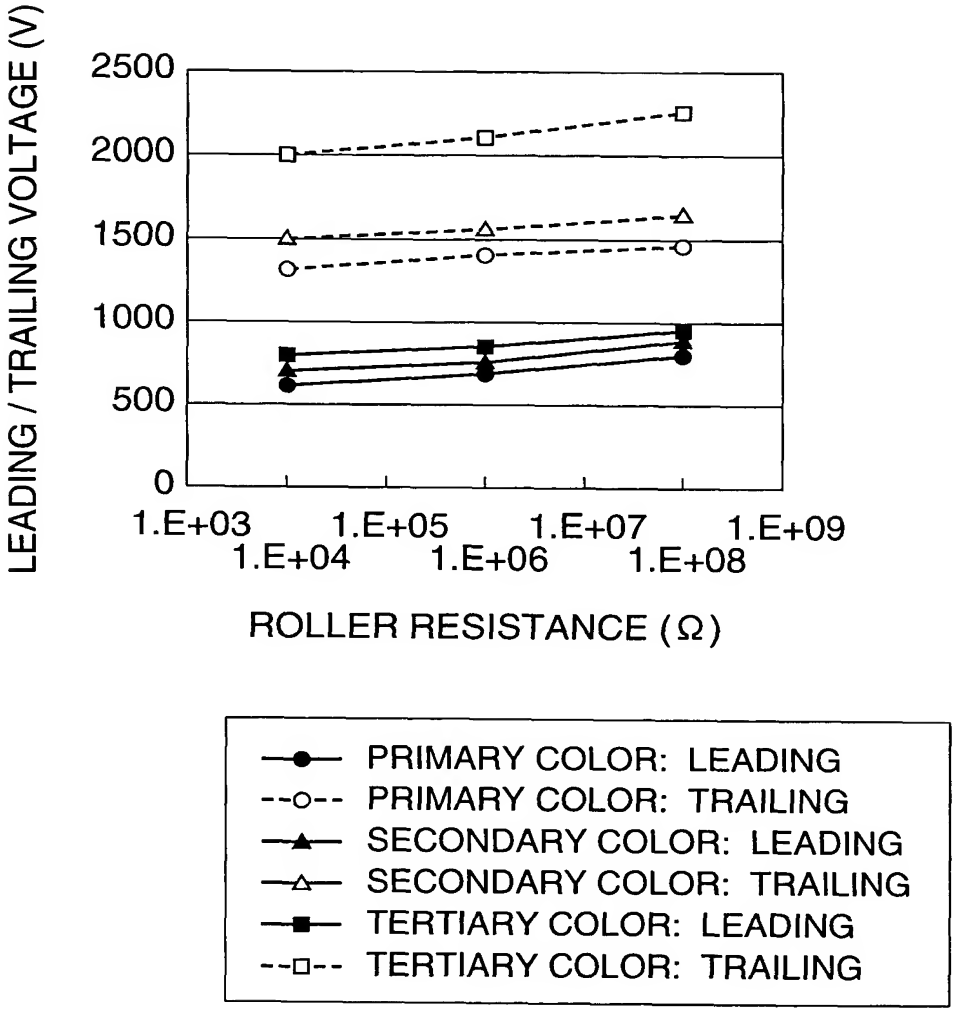


FIG. 26


LEADING / TRAILING VOLTAGE (V)
2500
2000
1500
1000
500
0
1.E+03
1.E+04
1.E+05
1.E+06
1.E+07
1.E+08
1.E+09
ROLLER RESISTANCE (Ω)
PRIMARY COLOR: LEADING
PRIMARY COLOR: TRAILING
SECONDARY COLOR: LEADING
SECONDARY COLOR: TRAILING
TERTIARY COLOR: LEADING
TERTIARY COLOR: TRAILING

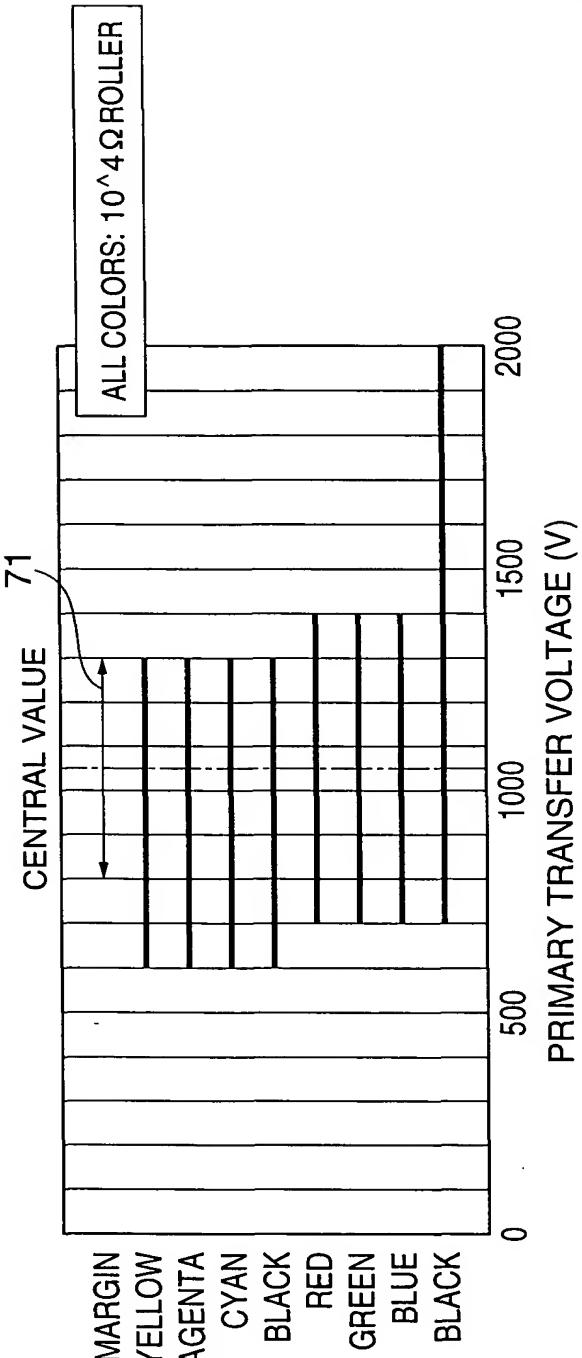


FIG. 27A
COMPARATIVE EXAMPLE

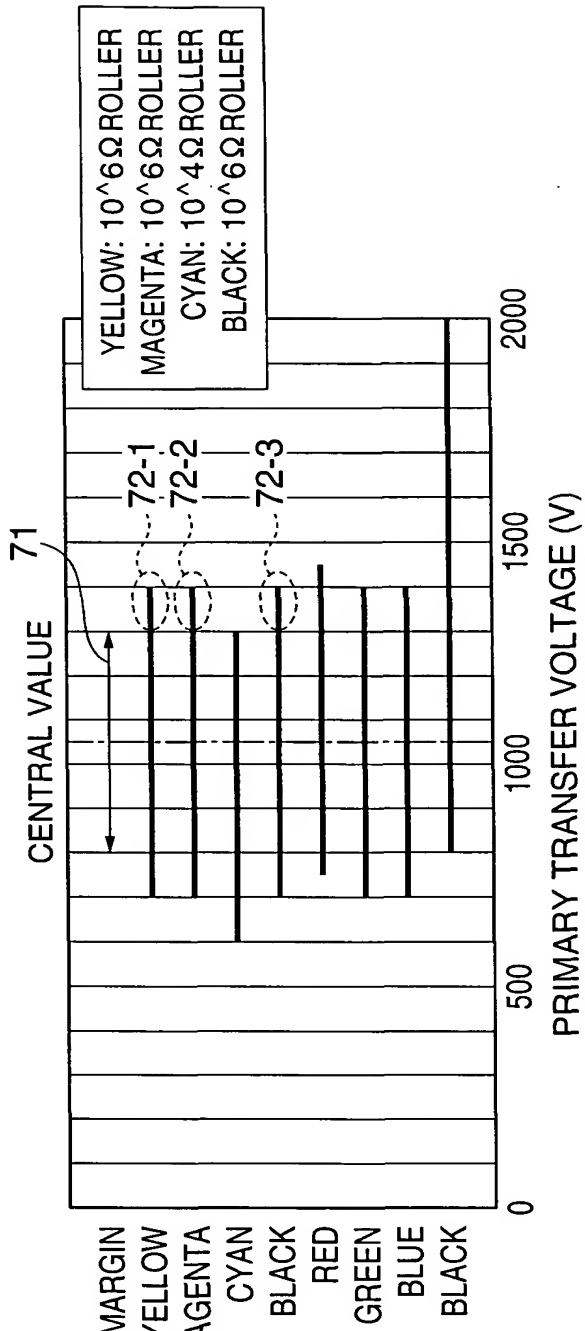


FIG. 27B
OPTIMUM EXAMPLE

FIG. 28

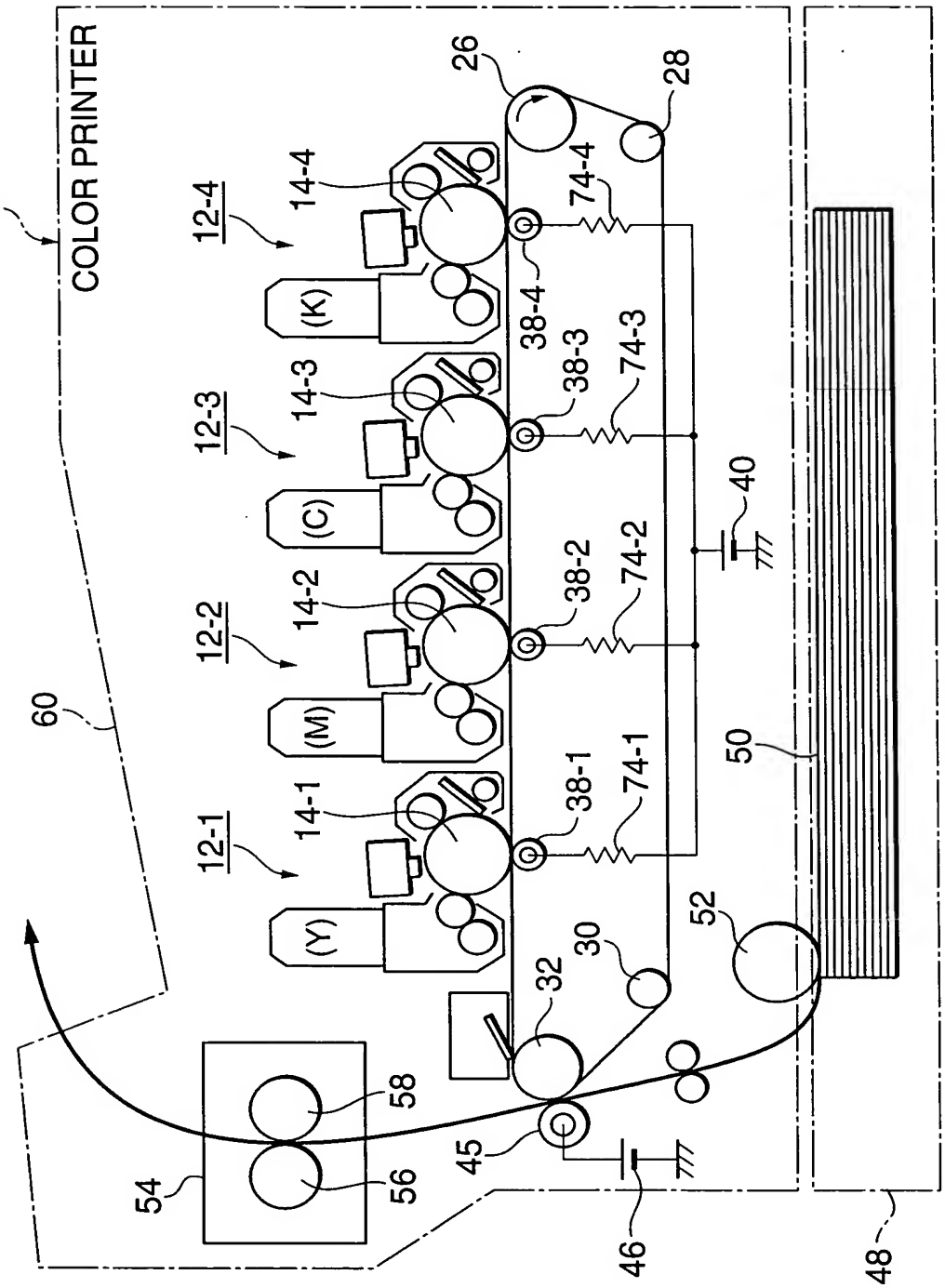
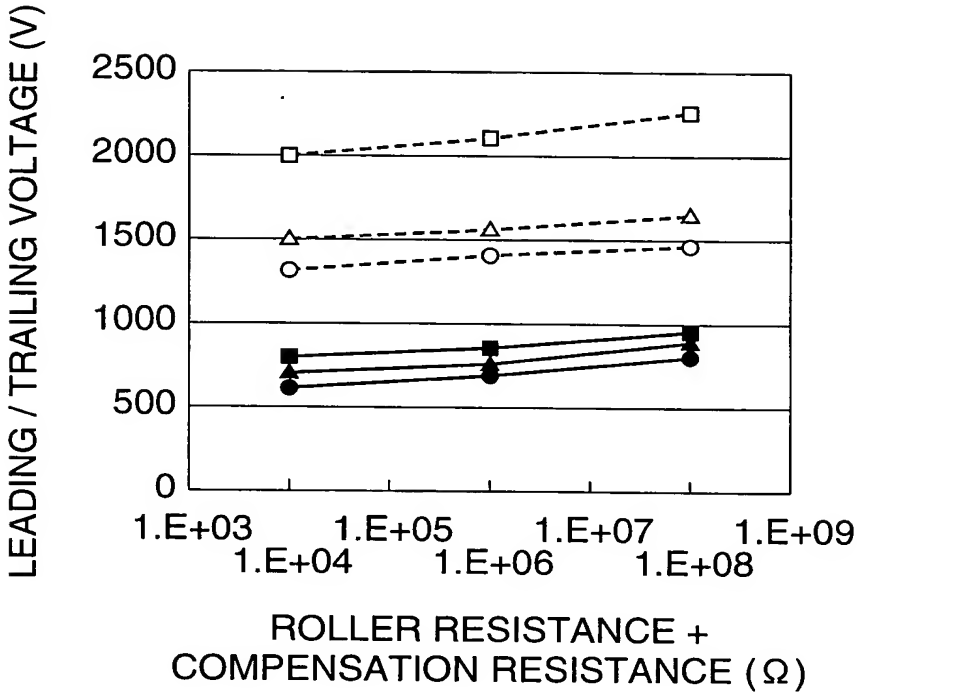

10
COLOR PRINTER
60
12-1
12-2
12-3
12-4
14-1
14-2
14-3
14-4
(Y)
(M)
(C)
(K)
26
28
74-4
38-4
38-3
74-3
40
38-2
74-2
38-1
74-1
50
52
30
32
58
54
56
45
46
48

FIG. 29


LEADING / TRAILING VOLTAGE (V)
2500
2000
1500
1000
500
0
1.E+03
1.E+04
1.E+05
1.E+06
1.E+07
1.E+08
1.E+09
ROLLER RESISTANCE +
COMPENSATION RESISTANCE (Ω)
PRIMARY COLOR: LEADING
PRIMARY COLOR: TRAILING
SECONDARY COLOR: LEADING
SECONDARY COLOR: TRAILING
TERTIARY COLOR: LEADING
TERTIARY COLOR: TRAILING

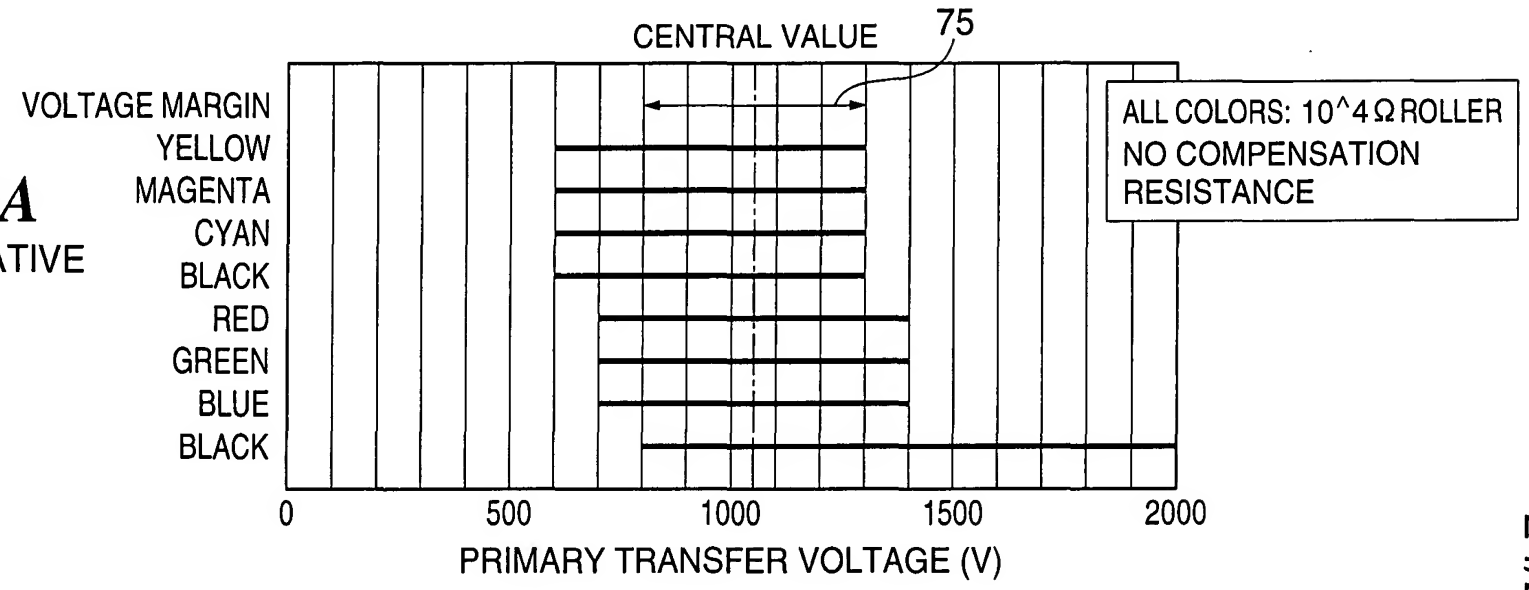


FIG. 30A

COMPARATIVE EXAMPLE

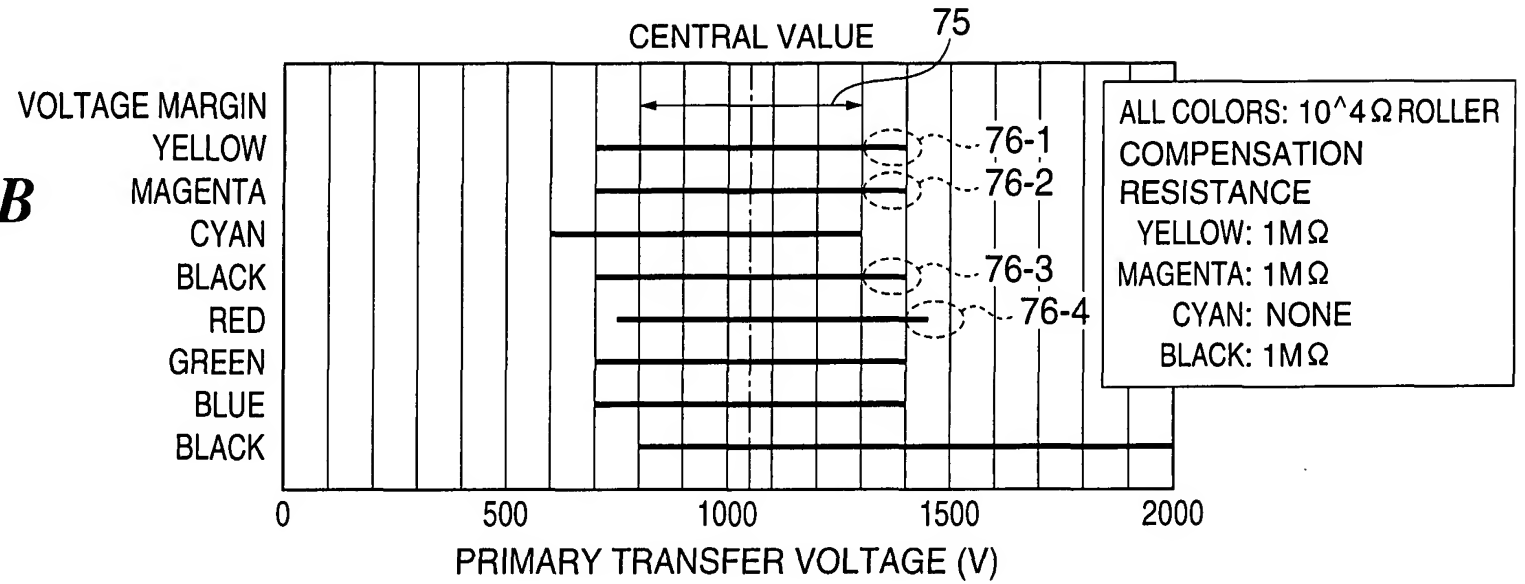


FIG. 30B

OPTIMUM EXAMPLE

FIG. 31

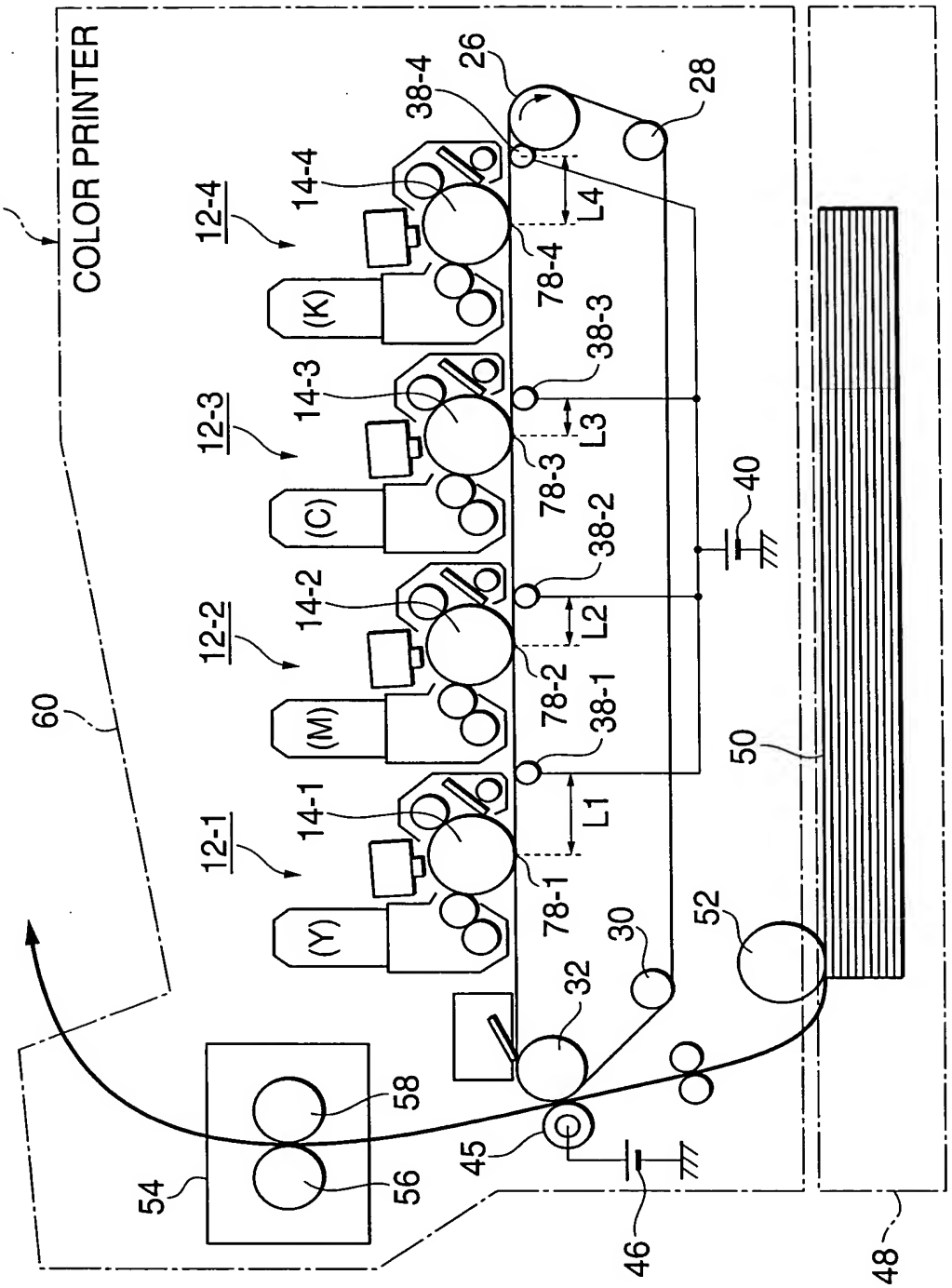
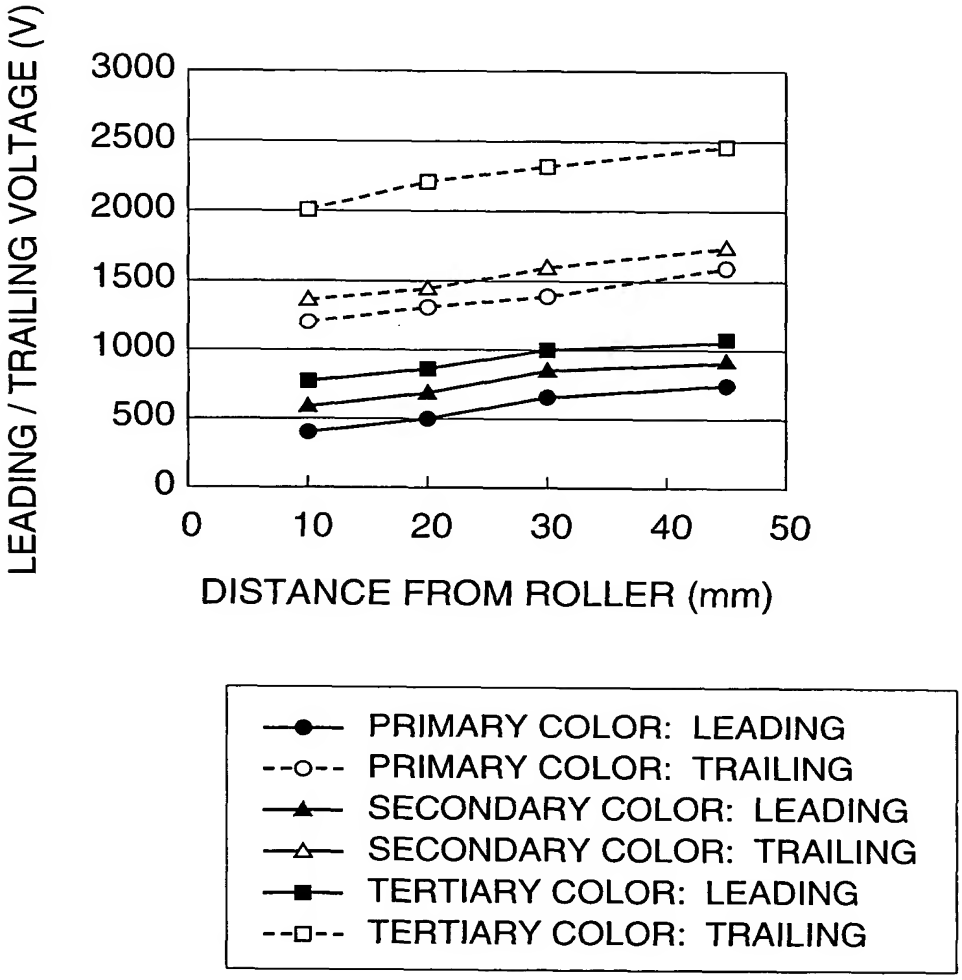

10
COLOR PRINTER
60
12-1
12-2
12-3
12-4
14-1
14-2
14-3
14-4
(Y)
(M)
(C)
(K)
78-1
78-2
78-3
78-4
38-1
38-2
38-3
38-4
L1
L2
L3
L4
26
28
30
32
40
45
46
48
50
52
54
56
58

FIG. 32


LEADING / TRAILING VOLTAGE (V)
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
DISTANCE FROM ROLLER (mm)
PRIMARY COLOR: LEADING
PRIMARY COLOR: TRAILING
SECONDARY COLOR: LEADING
SECONDARY COLOR: TRAILING
TERTIARY COLOR: LEADING
TERTIARY COLOR: TRAILING

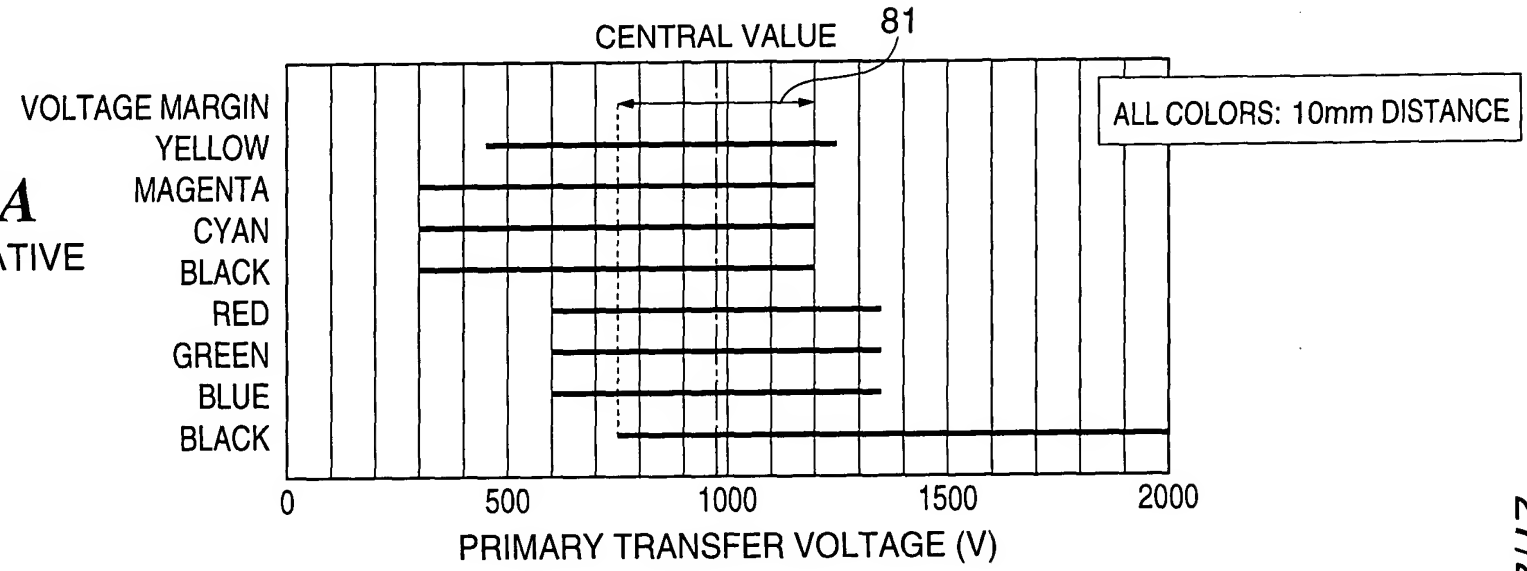


FIG. 33A
COMPARATIVE EXAMPLE

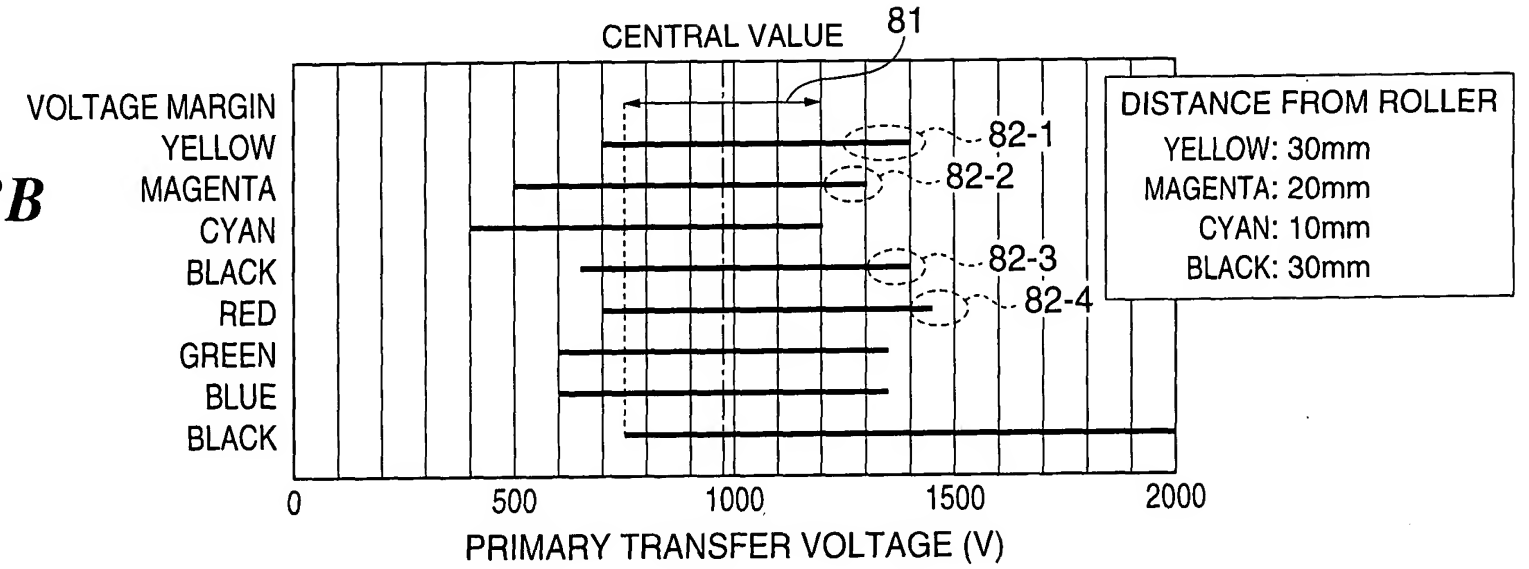


FIG. 33B
OPTIMUM EXAMPLE